

**CANON EOS 60D DSLR**  
**EXCLUSIVE HANDS-ON**



**NEW**

**ME AND MY INFRARED**  
**NIKON D300 CAMERA**

Saturday 11 September 2010

amateur

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**CANON EOS**

# 60D

New features for top-end APS-C EOS

**HANDS-ON  
REVIEW  
& NEWS**



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**EF LENSES ANNOUNCED**

New Canon optics: 8 to 600mm

**NEWS**



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**UK WILDLIFE**

AP's expert shows you how

**MAKE BIGGER PRINTS**

The best A3 and A2 inkjets

**BUYERS' GUIDE**



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# 26 / 27 October

Canon Pro Photo Solutions is the largest and most comprehensive exhibition of Canon imaging products under one roof. Whether you're a professional or semi professional photographer or videographer, this unique two day event is for you.

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**Amateur Photographer** For everyone who loves photography

**OUR STUDIO** photographer, who is as old as photography itself, was commenting only the other day to a Canon rep that it's a shame the pellicle mirror idea that Canon introduced in the 1960s has not been revisited since it died in the EOS-1N RS. The principle behind the semi-transparent pellicle mirror was that light could pass through it and reflect off it at the same time, so there was no need to make it flip up for a picture to be recorded. Without the requirement for mechanical movement, the delay between shutter activations could be reduced, and frame rates increased.

It's nice to see the idea making a bit of a comeback in the new SLT (single lens translucent) models

launched by Sony recently. Although the purpose of the reflective aspect of the mirror now is only to supply light to the AF sensors, and the balance of what passes through and what is reflected is different, the principle of the fixed position mirror remains the same, as do the aims – full-time AF and minimal delay between pictures being taken. Original ideas may be hard to come by, but there are plenty of ways to recycle old ones. I'm looking forward to the re-introduction of the solar-powered camera.



**Damien Demolder**  
Editor

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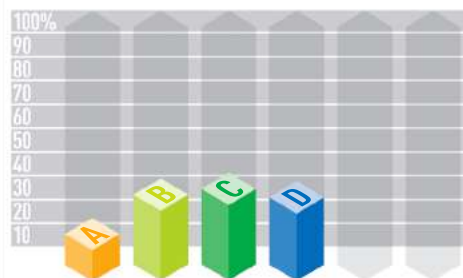
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**IN AP 28 AUGUST WE ASKED...** Would you be happy to buy a second-hand DSLR?



### YOU ANSWERED...

A Yes, but only the latest model	12%
B Yes, one generation old	29%
C Yes, even an old one	31%
D No, I would only buy new	28%

### THIS WEEK WE ASK...

Do you think the 'translucent' mirror of the Sony Alpha 55 and 33 is a good idea?

**VOTE ONLINE** [www.amateurphotographer.co.uk](http://www.amateurphotographer.co.uk)

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Ed Kashi tells the story of exploitation in the Niger Delta

**HOW TO HAVE YOUR PICTURES PUBLISHED IN READER SPOTLIGHT** Send in a selection of up to ten images. They can be either a selection of different images or all have the same theme. Digital files sent on CD should be saved in a Photoshop-compatible format, such as JPEG or TIFF, with a contact sheet and submission form. Visit [www.amateurphotographer.co.uk/readerspotlight](http://www.amateurphotographer.co.uk/readerspotlight) for details. We cannot publish images without the necessary technical details. Each RGB image should be a minimum of 2480 pixels along its longest length. Transparencies and prints are also accepted. We recommend that transparencies are sent without glass mounts and posted via Special Delivery. For transparencies, prints or discs to be returned you must include an SAE with sufficient postage.

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# APNews

News | Analysis | Comment | PhotoDiary 11/9/10

**Sensia 100 was the first film I shot when I first started seriously trying to learn photography**

Fujifilm's slide film axed, page 7



New mid-range EOS • 18MP • Flip-out screen

## OCTOBER DEBUT FOR CANON'S EOS 60D

**CANON** has announced the launch of the EOS 60D, an 18-million-pixel DSLR pitched between the EOS 550D and EOS 7D, replacing the two-year-old (15.1MP) EOS 50D.

Aimed at photography enthusiasts, the 60D uses the same sensor as the 550D and borrows its low-pass filter from the 7D.

Canon UK has confirmed that the 60D will cost £1,099.99 (body only) and will go on sale in October.

Billed as more than a simple upgrade, the 60D boasts Full HD movie recording (1920x1080 pixels), plus a 3in vari-angle LCD screen carrying a resolution of 1.04 million dots.

The movie mode includes full manual control and an external stereo microphone terminal has been included.

AP understands that the 60D is more weatherproof than the 50D, although not on a par with its 7D sibling.

Key differences over the 550D include in-camera raw image processing, allowing photographers to edit settings such as brightness, contrast, white balance or chromatic aberration and the ability to save the file as a JPEG. A built-in Speedlite flash transmitter allows control of Groups A and B Speedlite flash, says Canon.

A new feature is Basic +, a function that allows photographers, via the menu, to add their own creative touch to images, such as daylight, cloudy or sunset effects. Preset picture styles include vivid, soft, warm or monochrome. Users can also select the image aspect ratio they want (from a choice



of 3:2, 4:3, 16:9 and 1:1).

Post-capture creative filter options include grainy b&w, soft focus and toy camera – an effect that alters the colour bias of an image.

To aid handling, the 60D sports a redesigned body, combining an 'ergonomically enhanced, curved shape with a new button layout', says Canon.

Canon has added a Quick Control button for instant access to the most common settings and playback controls.

A horizontal electronic level can be displayed on the Live View screen, or in the camera's viewfinder, to help when composing landscape photographs.

Equivalent ISO sensitivity ranges from 100–6400 (expandable to 12,800) and a shooting speed of 5.3 frames per second is possible, which is slightly lower than the 6.4fps on the 50D. The 60D also inherits the iFCL metering system of the 7D and uses a 63-zone Dual-Layer sensor.

A movie crop option is available, allowing recording of the central 640x480 pixel area of the sensor to create an effective magnification of around 7x.

The EOS 60D will be available in various kits, ranging from an 18–55mm lens outfit costing £1,199.99, up to a 17–85mm lens kit costing £1,449.99.

● See our hands-on preview of the EOS 60D on pages 8–9 of this issue.

## SNAP SHOTS

● Olympus this month debuts a trio of budget-priced wideangle compact cameras. The 14-million-pixel FE-5050 (£129) and 12MP FE-5040 (£119) both sport a 26–130mm equivalent lens in 35mm-film-camera terms, while the 12MP FE-4050 (£99) features a 27–108mm zoom.

● Canon has debuted a slimmed-down 'ultra-compact' dye-sublimation Selphy photo printer in the shape of the CP800. The CP800 measures 177x134.6x68.8mm (without protrusions). The CP800 has a 2.5in LCD screen and is designed to print a postcard-sized photo in around 47 seconds. The newcomer costs £99 and is due on sale in September.

## PHOTOGRAPHERS INVITED TO TERROR TALKS

**AP RIGHTS WATCH**  
Committed to defending your photographic rights!

**AS WE** went to press, the Home

Office invited photographers to take part in discussions as part of the Government's review of key counter-terrorism powers.

Invitations have gone out to members of the photographic industry, including a representative of the Royal Photographic Society and *Amateur Photographer*.

The meeting, scheduled to take place at the Home Office next month, will review the use of terrorism legislation in relation to photography.

Lord Macdonald, who will provide an independent oversight of the review of terrorism legislation, is also expected to attend next month's Home Office meeting.

Many photographers have fallen victim to police use of anti-terror measures when

taking innocent pictures in a public place, sparking AP's nationwide campaign to protect photographers' rights.

In July, Home Secretary Theresa May said the use of counter-terrorism legislation in relation to 'photography' will be reviewed as a 'priority' as part of a rapid overhaul of anti-terrorism laws.

She added: 'I want a counter-terrorism regime that is proportionate, focused and

transparent. We must ensure that in protecting public safety, the powers we need to deal with terrorism are in keeping with Britain's traditions of freedom and fairness.'

The Home Office pledged to review photography and anti-terror laws, alongside legislation regarding the detention of terrorist suspects before charge, and the use of control orders.

The Government has already scrapped police use of Section 44 of the Terrorism Act to stop and search photographers taking pictures in a public place.



**Do you have a story?**

Contact Chris Cheesman  
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Fax: 0203 148 8130  
amateurphotographer@ipcmedia.com

A week of photographic opportunity

## PHOTO DIARY

Wednesday 8 September

**EXHIBITION** Love from London: A City of Stars, photographs featuring renowned film stars in London, until 9 October at Getty Images Gallery, London W1W 8DX. Tel: 0207 291 5380. Visit [www.gettyimagesgallery.com](http://www.gettyimagesgallery.com).

**EXHIBITION** Face to Face by James Mollison, 30 large-scale portraits of apes, until 26 September at The Herbert Art Gallery & Museum, Coventry CV1 5QP. Tel: 02476 294 736.



Thursday 9 September

**EXHIBITION** Astrid Kirchherr: A Retrospective [Beatles images], until 29 January 2011 at Victoria Gallery & Museum, University of Liverpool, Liverpool L69 3DR. Visit [www.liv.ac.uk/vgm](http://www.liv.ac.uk/vgm). **EXHIBITION** The Press Photographers' Year 2010, until 10 September at Lyttelton Foyer, National Theatre, South Bank, London SE1 9PX. Tel: 0207 452 3000.

Friday 10 September

**EXHIBITION** based on the Shrewsbury Town Trail at Bear Steps Gallery, Shrewsbury, Shropshire SY1 1UH. Tel: 01743 356 511. **EXHIBITION** The Wall by Iain Weir, snapshots into the physical challenges and triumphs of some of the UK's top sporting events, until 14 November at the River & Rowing Museum, Henley on Thames, Oxfordshire RG9 1BF. Tel: 01491 415 600.

Saturday 11 September

**DON'T MISS** Street Photography & [DSLR] Camera Handling. Two-day course, continues 12 September (cost £235), at Toynbee Studios, London E1 6AB. Tel 0845 260 2460. Visit [www.shootexperience.com](http://www.shootexperience.com).

**DON'T MISS** Experience Seminars hosts a free Canon EOS system open day at Calumet UK, Euston, London NW1 2HJ (9.30am-5pm). For course details visit [www.calumetphoto.co.uk](http://www.calumetphoto.co.uk) or call 01487 772804.

Sunday 12 September

**EXHIBITION** Wildlife Photographer of the Year 2009, until 12 September at Winchester Discovery Centre, Hampshire SO23 8SB. Tel: 01962 873 603. Visit [www3.hants.gov.uk/wdc.htm](http://www3.hants.gov.uk/wdc.htm).

**DON'T MISS** Thames Festival on London's South Bank.

Monday 13 September

**EXHIBITION** Invisible by Victoria Rance and Clare Whistler, until 18 September at Lucy Bell Gallery, St Leonard's-on-Sea, East Sussex TN38 0EJ. Tel 01424 434 828. Visit [www.lucy-bell.com](http://www.lucy-bell.com).

**EXHIBITION** Sally Soames photographs, until 1 October at University Gallery, Northumbria University, Newcastle upon Tyne NE1 8ST. Tel: 0191 227 4424. Visit [www.northumbria.ac.uk](http://www.northumbria.ac.uk).



Tuesday 14 September **LATEST AP ON SALE**

**EXHIBITION** Astronomy Photographer of the Year 2010 at Royal Observatory, London SE10 8XJ. Visit [www.flickr.com/groups/astrophoto](http://www.flickr.com/groups/astrophoto).

**EXHIBITION** Strangelands by various photographers, until 3 October at Third Floor Gallery, Cardiff CF10 5AD. Tel: 02921 159 151.

Fisheye included in range

## CANON BOOSTS PROFESSIONAL LENS LINE-UP

**THE 'WORLD'S'** first fisheye zoom to deliver both circular and full-frame images is among a plethora of new professional lenses from Canon.

The EF 8-15mm f/4L fisheye USM replaces the 15mm f/2.8 fisheye, a 23-year-old optic the parts for which can no longer be sourced, according to Canon.

Updates to existing lenses include the EF 400mm f/2.8L IS II USM and EF 300mm f/2.8L IS II USM, boasting improved Image Stabiliser technology and 'rapid' AF systems.

Meanwhile, the 'travel-friendly'-sized EF 70-300mm f/4-5.6L IS USM is aimed at advanced amateurs and professionals wanting to shoot portraits, nature and action shots. Canon claims that the zoom ring is more comfortable to use.

Canon has also announced the Extender EF 1.4x III and Extender EF 2x III for its L-series of super-telephoto lenses. Claimed improvements include improved data communication between lens and camera body and faster AF.

The optical elements of all Canon's new lenses include a Spectra coating, which aims to reduce flare and ghosting.

A new fluorine coating on the front and rear elements makes marks, such as those left by water, 'much easier to clean'.

Canon's new EF 8-15mm f/4L fisheye (top) and EF 70-300mm f/4-5.6L IS USM lenses



## CANON LAUNCHES NEW PHOTO PRINTER

The Pixma iP4850 is the latest dedicated A4 photo printer from Canon. Due out this month priced £99, the iP4850 replaces the iP4700 and features a maximum resolution of 9,600dpi and is claimed to be able to deliver a 6x4in borderless print in around 20secs.





## SNAP SHOTS

● Canon plans to unveil a pair of new super-telephoto L-series professional lenses later this month. The EF 500mm f/4L IS II USM and EF 600mm f/4L IS II USM will be showcased at the photokina trade show to be held in Cologne, Germany, from 21-26 September.

● A shop dedicated to selling Domke bags has opened in south-east London. The Domke Pro-Press Centre stocks Domke's 99 bags, plus accessories such as filters, lighting and tripods. The store is located at LFC/Domke, Canterbury Road, Kennington Park, London SW9 6DE. It is open Mon-Fri 9.30am-5pm and can be contacted on 0870 100 1220. Visit [www.domkebags.co.uk](http://www.domkebags.co.uk).

● Planning a trip to New York? More than 4,000 historic negatives of the Spanish Civil War by Robert Capa, David Seymour and Gerda Taro will go on display at the International Center of Photography in the city from 24 September. The archive was contained in the so-called 'Mexican Suitcase', the discovery of which was announced in 2008. The exhibition will run until 9 January 2011. Visit [www.icp.org](http://www.icp.org).



## Do you have a story?

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'Sufficient stocks' until December says firm

## NO REPRIEVE AS FUJI ENDS SENSIA PRODUCTION

**PHOTOGRAPHERS** have lamented the end of Fujifilm Fujichrome Sensia slide film after the firm confirmed that production has ceased.

Photographers have used online forums to express their dismay at the move.

'That is terrible news,' wrote David Whitehall on a Flickr

discussion group.

'Sensia 100 was the first film I shot when I first started seriously trying to learn photography about ten years ago...'

Another user, named Kuronakko, said: 'Sensia had the best qualities of [Fujifilm] Provia and Astia combined,

but at a lower price.'

Announcing the move at the end of last month, Fujifilm's product manager for Professional Film Gabriel Da Costa said: 'Due to increasing production costs and decreasing demand globally, all Fujichrome Sensia film (ISO 100, 200 and 400)

has been discontinued.

'Our laboratory in Leeds will continue to process and mount Fujichrome Sensia film until all stocks are depleted, including all rolls previously sold and awaiting processing.'

There are sufficient stocks of 'most speeds' to satisfy demand until December, claims the firm.



## CANON DEBUTS POWERSHOT PAIRING

**A PAIR** of new PowerShot cameras have been launched by Canon.

Canon bills the PowerShot S95 as a compact camera for photographers looking for 'outstanding low-light performance and manual control in a pocket-sized body'.

Replacing the PowerShot S90, the S95 sports an f/2 lens delivering the 35mm viewing angle equivalent of a 28-105mm zoom.

The camera's HS system combines a 'high-sensitivity' 10MP sensor (equivalent ISO sensitivity of 80-3200, expandable to 12,800 at 2.5MP) with a Digic 4 processor in a bid to deliver 'exceptional low-light performance'.

A lens control ring allows photographers to adjust settings such as shutter speeds, aperture, focus and exposure compensation.

A new Tracking AF mode allows users to select objects from the centre of a frame and track them if they move, or if the frame is recomposed, according to Canon.

Priced £399, the S95 can shoot raw-format images, HD video (1280 x 720 pixels) and houses a 3in PureColor II G LCD monitor with a resolution of 461,000 dots.

Other features include a High Dynamic Range option and an RGB histogram available in playback mode to help photographers check exposure details instantly.

The S95 is compatible with Eye-Fi cards, allowing uploading of images via a wireless network.

Also new is the PowerShot SX130 IS, priced £199 and featuring a 12.1-million-pixel sensor and a 12x lens (35mm viewing angle equivalent of a 28-336mm zoom).



Features include HD video (720-pixel) shooting with stereo sound.

The SX130 IS supports SDXC memory cards, enabling storage of up to 2TB.

## CANON SPEEDS UP BUDGET SCANNERS



**CANON** has revamped its scanner range with the introduction of the CanoScan LiDE 210 and LiDE 110, both due on sale in September.

The CanoScan LiDE 210 and LiDE 110 replace the LiDE 200 and LiDE 100 and are claimed

to offer faster scanning.

For example, the LiDE 210 takes ten seconds to scan a 300dpi A4 image compared to 14 seconds on its predecessor, according to the manufacturer. An Auto Scan button has been added to both models, allowing the devices to automatically recognise the type of document and save the scanned image using suitable settings.

The CanoScan LiDE 210 can scan up to 4800x4800ppi resolution and costs £95, while the 2400x4800ppi LiDE 110 is priced £75.



## 1000HS MARKS DECADE OF CANON IXUS

**CANON** has unveiled the IXUS 1000 HS to mark ten years of the IXUS digital compact camera brand.

The ten-million-pixel model boasts a 10x lens delivering the 35mm viewing angle equivalent of a 36-360mm zoom.

Features include Full HD video capture (1920x1080

pixels) at 24 frames per second.

Also on board is a 3in PureColor II G LCD 16:9-format monitor and a miniature-effect function designed to make subjects appear as small-scale models.

Due on sale in September, the IXUS 1000 HS will cost £349.



Right: To prevent accidental shooting mode changes, the release button at the centre of the main mode dial must be depressed before the dial can be rotated

Left: The set button is surrounded by the control pad and dial that make up the new multi-control dial



## AP hands-on Canon EOS 60D

After getting her hands on a pre-production model, **Angela Nicholson** thinks there's plenty to get excited about with Canon's 18-million-pixel EOS 60D

**TIME** has been running out for the EOS 50D ever since Canon announced the EOS 7D, and it was clearly in extra time once the EOS 550D was unveiled, so it's replacement, the EOS 60D, doesn't come as a huge surprise to many. However, the new camera isn't just a halfway house between Canon's top-end APS-C-format DSLR and its premier entry-level model, as it has a couple of extras that will make it a tempting option for many enthusiast photographers.

Predictably, the EOS 60D has the same 18-million-pixel sensor as the EOS 550D, but with the EOS 7D's low-pass filter, so we can anticipate high-quality, detail-rich images. What I hadn't expected to see as I was passed a pre-production EOS 60D, though, was a vari-angle screen. Yet that's exactly what it has, and the monitor can be flipped out by 175° and rotated through 270°. It makes composing the scene in Live View mode much easier when shooting from unusual angles. Impressively, Canon hasn't made any compromise on the size or resolution of this 3in LCD and it is the same as the screen in the EOS 550D. The viewing area has the same 3:2 aspect ratio as the sensor and the image is made up from 1.04 million dots. The high resolution of the screen should ensure it is possible to check critical focus even when shooting at

### AT A GLANCE

- 18 million effective pixels
- 3in, 1.04-million-dot, vari-angle LCD screen
- In-camera raw processing
- Integral Speedlite transmitter
- 1920x1080-pixel video at 30, 25 or 24fps

a range of normally awkward angles. I was very impressed by the EOS 550D's screen and I'm looking forward to shooting from low angles with the EOS 60D when we get a full production model in for testing.

As we might expect, the EOS 60D has a Digic 4 processor and this, plus the four-channel sensor read-out, enables a maximum continuous shooting rate of 5.3fps. This is lower than the 6.4fps of the EOS 50D, but it is just about forgivable given the pixel count jump of three million. The EOS 7D has a maximum continuous shooting rate of 8fps, but it also has an eight-channel read-out system.

### WIRELESS FLASH

I am disappointed that Canon has stuck with nine cross-type AF points for the EOS 60D. It's not that the EOS 50D's AF system performance is poor, but I was hoping that we might see a few more points, perhaps the 19 of the EOS 7D to bring it closer to the 51 of the Nikon D300S.

As the new camera has Canon's new 63-zone iFCL metering, which was launched with the EOS 7D, information about subject location and distance is gathered from the AF system to help determine correct exposure. We have found in the past that in its evaluative mode this metering system

puts more emphasis on the brightness of the subject under the AF point than Canon's older 35-zone evaluative metering system. While this isn't necessarily a bad thing, it is something that enthusiasts upgrading from an EOS 40D or EOS 50D will have to look out for.

Canon included wireless flash control in a DSLR for the first time with the EOS 7D and I'm pleased it has been incorporated into the EOS 60D as well. It means the company has acknowledged that enthusiast photographers want to be able to use more advanced techniques. While the Speedlite transmitter in the EOS 7D can control up to three groups of EX-series Speedlite (or compatible) flashes, the EOS 60D's is limited to control over two groups, but that is enough for most situations.

Another feature carried over from the EOS 7D is the digital level, which enables users to ensure the horizon is at the correct angle. As the EOS 60D's viewfinder doesn't have the transmissive LCD screen of the EOS 7D, the level cannot be displayed using the AF points. Instead, the exposure compensation scale is used in the EOS 60D.

Although the EOS 60D's level can be displayed in either the viewfinder or the LCD screen (whether Live View mode is activated or not), users cannot throw away





their hotshoe-mounted spirit levels as the built-in device only works when the camera is in landscape orientation, not when the camera is upright.

### HANDLING

In creating the EOS 60D, Canon has done quite a bit more than just add a vari-angle hinge to the side of the screen to update the handling of the EOS 50D. The camera's layout has changed, and although the rear navigation controls are different, from behind the EOS 60D looks more like the EOS 550D than either the EOS 7D or the EOS 50D. There are no buttons below or to the left of the EOS 60D's main LCD, and those to the right of it are large, flat and shaped to fit within the camera's contours like the EOS 550D's.

I was a little concerned when I first tried the EOS 60D's multi-control dial. It looks like two concentric rings around the set dial and merges the functions of the large rotating wheel quick control dial, mini-joystick multi-controller and set button of Canon's other higher end DSLRs. At first the inner ring, which takes the role of the mini-joystick controller, seemed hard to distinguish and felt too shallow. However, after only a few moments' use I became happier with it and found it easier to select the diagonal AF points that fall between the outer extreme points than it is with the joystick controller.

Canon UK's David Parry, Product Intelligence Professional, told me that part of the reason for changing the camera control layout is to make the multi-control dial easier to reach and operate when

the EOS 60D is used with its optional BG-E9 battery grip. Unfortunately, a grip wasn't available to verify this with the pre-production model I used, but I think it will make a significant difference.

Despite the addition of the vari-angle screen, at 144.5x105.8x78.6mm the EOS 60D is slightly smaller than the EOS 50D, which measures 145.5x107.8x73.5mm. Canon has also changed the body construction and the EOS 60D is made from aluminium and polycarbonate rather than magnesium alloy and polycarbonate like the EOS 50D and EOS 7D. Although the EOS 60D still has the mid-range level of robustness that we expect, it's not quite as tough feeling as the EOS 7D or the pro-level EOS-1D Mark IV. However, it is reassuringly meatier than the EOS 1000D.

**Like the EOS 550D, the EOS 60D has a 3in, 1.04-million-dot LCD screen, but the new camera's monitor has a vari-angle hinge that allows the screen to be viewed when shooting above or below head height**



### IN-CAMERA PROCESSING

Canon appears to have tried to make the EOS 60D a more rounded camera and, as a result, in-camera raw processing has been introduced for the first time in a Canon DSLR. Adjustments may be made to the image brightness, contrast and white balance, and curvilinear distortion and chromatic aberration can be corrected. The raw image is preserved while the edited version may be saved as a JPEG file.

There is also a selection of filter effects, including grainy black and white, soft focus, toy camera and miniature, that can be applied post-capture to raw and JPEG images in-camera. The miniature-effect filter applies the in-vogue fake tilt-and-shift treatment to images.

Although these features are fun and may be helpful on occasions, the ability to rank images captured on the EOS 60D out of five is much more useful. I wasn't able to download any images captured on the pre-production EOS 60D, but David Parry assured me that as the camera saves the image rating as an MXF wrapper file that is linked with the Exif data, the score is transferred into Canon and third-party processing software. This turns reviewing images in-camera (aka chimping) into a genuinely useful phase as the best images can be highlighted to make them easily identifiable when they are downloaded for processing. Bravo Canon.

### CONCLUSION

It would be easy to dismiss the EOS 60D as an EOS 550D with an articulated LCD screen, but it has quite a few additional refinements that make it a more complete tool for enthusiast photographers. It is disappointing that the level only works in one orientation, but the large, high-resolution flip-out screen is a real bonus for anyone who likes to shoot from a range of angles. Full HD video is now almost a given for a Canon DSLR, but I am pleased that the manufacturer has included wireless flash capability and post-capture image ranking.

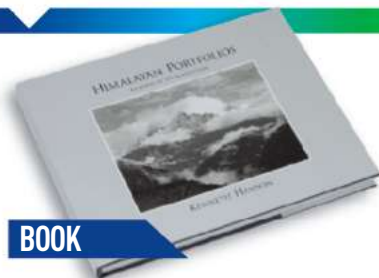
With a list price of £1,099.99, it won't be too long before it is available for under the magic £1,000 and I think it will prove popular with enthusiasts. **AP**

**'From behind the EOS 60D looks more like the EOS 550D than either the EOS 7D or the EOS 50D'**



# APReview

The latest photography books, exhibitions and websites. By Jeff Meyer



BOOK

## Himalayan Portfolios: Journeys of the Imagination

By Kenneth Hanson

Fields Publishing, hardback, 190 pages, £70.99, ISBN 978-0-9790597-0-4



**AS A YOUNG** boy living near the Pennine Moors, the profile of the Lakeland Mountains on

the horizon fuelled what would become Kenneth Hanson's lifelong passion for landscape photography. It wasn't until some 40 years later, however, that he realised his dream to photograph the Himalayas. From 1985–2005, Hanson and his wooden-tripod-mounted 4x5 Toyo view camera made a dozen treks to some of the most inaccessible reaches of this storied mountain range, many of which had never been visited by Westerners. Now in his mid-70s, Hanson has published this breathtaking portfolio of his travels.

An obvious comparison is Ansel Adams, for his timeless compositions and use of light and contrast, as well as his diligence to work in 'unworkable' regions. Yet there is also a strong travel and documentary element reminiscent of past greats like George Rodger. That Hanson is still making such beautiful pictures into his 70s is astounding. A photographer of remarkable ability, Hanson has created a portfolio of remarkable quality.

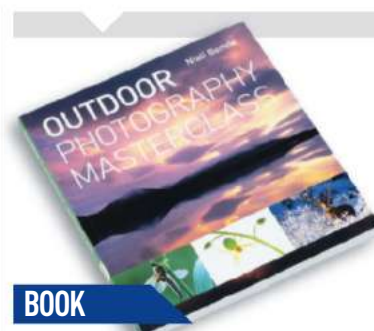
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BOOK

## Outdoor Photography Masterclass

By Niall Benvie

Photographers' Institute Press, paperback, 176 pages, £16.99, ISBN 978-1-86108-679-2



**IN THE** saturated market of photography technique guides, it's somewhat ironically

forgotten by authors and publishers that you need strong images to back up the writing. With a limited number of techniques to write about, it's often the supporting pictures that distinguish a photographer



**www.smashandpeas.com**



**SMASH** and Peas is a fun and insightful little photography blog with everything from great pictures to quirky lists (such as 20 examples of minimalist photography) to tips, tutorials and thoughtful musings on issues relevant to the modern photographer. Recent posts, for example, profile the life of a gig

photographer and state the reasons why photographers should start using Twitter to promote their work and follow others. The only downside to the site is the frequency of posting. It began to trail off earlier this year, and there has yet to be a new post since 18 May. Still, for the uninitiated, Smash and Peas is a treasure trove of cool pictures and good information.

## EXHIBITION

### Shaped by War: photographs by Don McCullin

11 September-21 November. Victoria Art Gallery, Bridge Street, Bath BA2 4AT. Open Tues-Sat 10am-5pm, Sun 1.30pm-5pm. Tel: 01225 477 233. Website: [www.victoriagal.org.uk](http://www.victoriagal.org.uk). Admission free

**GENERALLY** regarded as one of Britain's greatest living photographers, this exhibition of 100 of the legend's images ranges from his early years in working-class north London and evacuation in 1940 to the Somerset countryside, to his hard-hitting work for *The Sunday Times Magazine*, followed by the more peaceful landscapes and still lifes of the past two decades. Each of the images here has been printed by McCullin himself, and the show also includes personal memorabilia on loan, such as his Vietnam army helmet and boots, press passes and deportation orders, and a Nikon F camera that saved his life by taking a bullet when he was



in Cambodia. As if that's not enough to draw you in, a free audio guide tour of the exhibition by Don McCullin is also available. A must visit for any fan of McCullin or great documentary photography.



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from other authors and add weight to his or her words.

While many books in this vein disappoint, Benvie's latest guide to al fresco photography leaps out at you straightaway. A founding fellow of the International League of Conservation Photographers, Benvie's stunning images prove that he walks the walk for all the talking he does. While

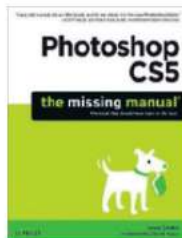
many chapters may sound familiar (backgrounds, composing, using light, and so on), there are advanced techniques within them to offer the reader a more complete lesson than do other books. Whether you're a beginner or on your third camera, *Outdoor Photography Masterclass* is both a pleasure to read and a visual treat to admire.

# CONDENSED READING

## A round-up of the latest photography books on the market



● **CLASSIC SWEDISH INTERIORS** by Lars Sjöberg, photographs by Ingalill Snitt, £30 While at first glance this may look like mass-produced fare for the checkout lines at Ikea, this is actually much more sophisticated. A passionate historian dedicated to saving Sweden's historic homes from demolition, Sjöberg profiles eight houses he has acquired. In work reminiscent of Irish photographer David Creedon, Snitt's images show the transformation of art, design and Swedish culture through the 17th, 18th and 19th centuries. Very enjoyable.



● **THE MISSING MANUAL: PHOTOSHOP CS5** by Lesa Snider, £38.50 At 796 pages, it's hard to imagine there is anything that has been left out. Snider covers every advanced technique, and then some that you've never even heard of. *The Missing Manual* lives up to its title and is certainly worth the cost. ● **ISSUES IN THE CONSERVATION OF PHOTOGRAPHS** edited by Debra Hess Norris and Jennifer Jae Gutierrez, £48 It's the week for pricey books in AP, but again, this one earns its place on the shelf for anyone involved in image conservation. With 72 essays from the dawn of photography to today covering everything from safe environments, silver image permanence, treatment methods and even the philosophical aspects of image conservation, this is *the bible* on the subject.

# Letters

Share your views and opinions with fellow AP readers every week

## Write to...

'Letters' at the usual AP address (see page 3) fax to 020 3148 8130 or email to amateurphotographer@ipcmedia.com

\*Please indicate whether you would like to receive Fujifilm film or a memory card (please state type preferred) and include your full postal address

## Backchat

Send your thoughts or views (about 500 words) to 'Backchat' at the usual AP address (see page 3). A fee of £50 will be paid on publication

## LETTER OF THE WEEK

Wins a 20-roll pack of 36-exposure Fujifilm Superia ISO 200 35mm film or a Fujifilm 4GB media card\*



FUJIFILM

### NO SENSE IN SENSOR SIZES

I cannot help but comment on the ratio of sensors in cameras. The standard 35mm format always measured 24x36mm. Nikon tried a 24x32mm frame just after the war, but failed when the USA stopped its import as it didn't correspond with Kodachrome mounts.

Personally, I have always found the 35mm format too long. Most papers do not come in the same proportions as 35mm film. I regularly have to 'waste' a strip on one side of the negative so that I can print without having to trim the paper. I like 645-format film, which doesn't have this problem.

I would have thought that with the introduction of digital cameras, this would have been an ideal time to standardise the ratio of the sensors. Some are 35mm full frame. My Canon is APS-C-sized, but still has the same ratio as 35mm. Four Thirds is mentioned a lot, and is incidentally the same as Nikon's original 24x32mm film. Yet we have standard A4 paper in our printers, which corresponds to neither. Why is this?

**Ken Williams, Merseyside**

**The "minor" cropping of images drives me mad, too. And unfortunately, inkjet paper is cut to office requirements rather than to photographers' – Damien Demolder, Editor**

### ATTACK OF THE CLONES

The letter from Donald Cooke (AP 21 August) regarding the similarities between the Panasonic Lumix DMC-TZ10 and the Leica V-Lux 20 digital compact cameras should serve as a reminder to always do your homework before parting with your cash. As I recall, the Panasonic camera came on the market some weeks, perhaps months, before the Leica model. When the Leica first appeared it was

fairly obvious that it and the Panasonic were as near as damn it one and the same camera.

This Leica/Panasonic 'partnership' is not new, of course. Not so long ago, there was the Panasonic Lumix DMC-LX3 and the remarkably similar Leica D-Lux 4, and other compacts before that. Now that Panasonic has released a DMC-LX5, presumably it won't be long before we also see a Leica-branded version in the camera shops. Of

course, a number of today's Panasonic cameras, including my Lumix DMC-TZ6 (which doesn't have a Leica-branded version), sport Leica lenses, and very good they are, too.

Even back in the days of 35mm compact cameras there were Leica and Panasonic 'clones'. I was under the impression in those days that the Leica-branded compacts were actually made by Panasonic, although I may be wrong. Is that also the case today?

At the end of the day, it's all down to whether or not you crave that little red badge on the front of your camera and are prepared to pay the extra for it. Personally, I'm happy with the Panasonic.

**Terry Campbell, Moray**

**While on the outside those Leica and Panasonic cameras have been the same, the image processing has been different – Damien Demolder, Editor**

### NO NEED TO BE UPSET

I see from the internet that Ricoh has announced the CX4. I am somewhat dismayed by this as I have just bought the CX3 following Tim Coleman's excellent review of it (AP 24 July). The CX3 is in itself a recent model.

I am delighted with the CX3. Should I be upset by the announcement of the CX4? **John Strain, Tyne and Wear**

**That there is now a CX4 does not diminish the quality of the CX3. The real differences are improved IS and AF tracking, so you're not missing out too much – Damien Demolder, Editor**

### LIVES BASED ON FEAR

Your letter of the week from Nick Wilkinson (AP 14 August) initially shocked me and the response from Dr Peter Dewhurst seriously angered me. Nick is right in that child protection regulations are quoted without thought or justification. To ban photographs within the Devonshire Dome for this reason is to imply that everyone and anyone carrying a camera is an actual or potential pervert. It says much about the sorry state of this country that such an implication is allowed to be made without a right and means of challenge!

As for the response from the dean, well, one questions what sort of society he inhabits. He says the university 'cannot allow visitors to the Dome to take photographs in case they unwittingly capture images of the children'. For the sake of sanity, can someone advise me of the percentage of people who would be 'turned on' by school kids in scruffy uniforms and school mags completing a school project? And just in case anyone questions my naivety, I am a social worker and have therefore not led a protected life.

This country is sick and the sickest people are those who feed the paranoia that we are surrounded by abusers, terrorists and murderers. We cannot go on living lives based on fear and suspicion of each other.

**Roger Andrew, via email**

## What The Duck





CRAIG NEARY



### IT'S NOT SO BAD

I just read your review of the book *Killer Photos with Your iPhone* (Review, AP 21 August) and I must say I'm quite disappointed. I have a Nikon D200 with lots of lenses and equipment I use once in a blue moon. If I'm off out for the day, I cart around a heavy gadget bag full of equipment and a tripod in the car. Yet whenever I leave the house for whatever occasion, I always have my camera phone and I have to say, in my experience, the two-million-pixel camera is fine for taking snaps while out and about. I imagine the reason for the low-res camera is to make it quicker to upload pictures to social networking

sites. Remember, it's the photographer who takes a good picture, not the camera! So your comment, 'buy a "real" camera' is nonsense.

The image (above) was taken by me using my iPhone and, although low res, it makes a perfectly acceptable photograph.

**Craig Neary, West Yorkshire**

### WHERE ARE THEY?

It was good to see the reply from Dr Dewhurst of the University of Derby Buxton in AP 14 August, but he has failed to answer Nick Wilkinson's question. Will Dr Dewhurst please provide a reference to the applicable 'child protection regulations' and 'safeguarding policies'? Surely, it is the very essence of regulations and policies that they are written down somewhere, so where are they? I do hope it's not another case of officials simply asserting that the law is whatever they say it is, as Jules Mattsson experienced recently (*News*, AP 31 July).

**Craig Heath, Hertfordshire**

### DIY PROJECT

I have a Panasonic Lumix DMC-TZ7, and the two disadvantages of compact cameras like mine are that the display is difficult to see in bright sunlight and the camera does not take lens filters. However, I solved both these problems on my camera and have included some photos for you to see.

I made a camera display viewer out of an old Jessops photo slide viewer, but with the front slide holder section removed and some stick-on rubber strips added around the edges and painted blue. Three rubber bands looped together are used to hold the viewer to the rear of the camera.

I also made a front lens filter device from a plastic cap of a can of spray, but this was tricky to make. I cut a hole of about 52mm diameter in the end of the plastic cap so it can fit tightly onto the front of the camera lens rim (when the camera is switched off). The inside diameter of the plastic cap measured about 62mm in diameter, so I bought a Hoya filter step-down ring to fit 62mm to 58mm filters (the size of the collection I own). The step-down ring fitted tightly into the front of the plastic cap.

Before fitting the ring, though, I had to cut the cap to a slightly shorter length so that it wouldn't show in any wideangle shots, but not too short otherwise the lens would hit the glass when projected out. Finally,

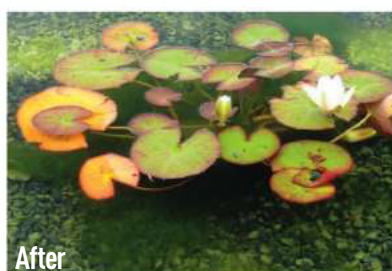
around the inside and outside of the cap I used decorator's masking tape, painted black using acrylic paint. I first used this idea about ten years ago on my first digital camera, a Sony.

I can now take the kinds of photographs that are not normally possible with a digital compact camera, as the images (below) of a pond show.

**John Pearce, Buckinghamshire**



**John has overcome two problems that affect some compact cameras with a little DIY ingenuity**



# BACK CHAT

## Terry Hamilton finds it sad that some photographers adopt a snobby attitude towards compact cameras

**'IF ONLY** I had my camera with me...' How many times have we said that, or heard others bemoan the fact that if they'd had their camera to hand they would have taken one of the finest images imaginable? Yet as they left their camera at home they can only curse their luck. Or, like me, they can do something about it.

Combining my two hobbies – photography and cycling – has proved difficult, not least because my Canon DSLR and its superb lens are too heavy to carry on a bike. Time and again, while out riding, I have missed a photo opportunity because my state-of-the-art DSLR was at home. If only I had my camera with me...

So I bought a Canon PowerShot G11, perhaps the ultimate point-and-shoot. It is high-spec, light and extremely portable, the antithesis of a DSLR in every way except in the results it produces. Of course, it has limitations. You can forget taking action shots, for example, but I have been using the G11 more and more, and my DSLR less and less, because I can carry the camera in my pocket as I cycle, and keep it handy when I am in my car or anywhere else.

Yet as I have used my G11, I have become aware of a certain type of photo enthusiast – the camera snob. I must admit to having been a bit of a camera snob myself before I bought my point-and-shoot model. I had not considered compacts 'proper' cameras until I got this one, and now I feel slightly ashamed of myself for having done so.

Let me explain. My friend is a Nikon man, so when I told him I had bought a Canon PowerShot G11, his first reaction was, 'Canon? Hmm.' Then when he realised it was a compact camera, albeit a sophisticated one that was hardly cheap, he adopted his camera snob persona, scarcely believing I could stoop so low as to make such a purchase. After all, aren't cameras like that for people who, frankly, don't know much about photography?

Sadly, my friend hasn't been the only one to adopt this attitude, but surely we should be judged by the quality of our images, not by our equipment. It's the photographer, not the camera, as they say.

Yet my pal liked one G11 image I posted on my Flickr page and couldn't believe it hadn't been taken with a DSLR. Then recently I was cycling across a motorway bridge. Below me was the biggest traffic jam you have ever seen on one carriageway, while the other side of the motorway was empty – except for stranded motorists who had left their cars and were having an impromptu game of football on the tarmac. Out came my G11 from my pocket. Result! One of my photos was printed by a mass-circulation national daily newspaper and in a regional daily. Great work, said my Nikon mate. Although I reckon he would still rather I had used a 'proper' camera. Nikon, of course.



# INTERfit

Expanding your creativity



## The EX Family



EX150

EXD200

EX300

EXD400

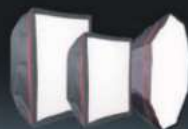
The multiple award winning family has grown recently with the introduction of two new units. Firstly the EX300 has more power than the EX150 and a new grab handle for easy positioning of the light. And the addition of fan cooling for constant and reliable service in a larger polycarbonate body. Easy to use controls make the EX300 desirable to any user where more power and versatility is required in a studio set up.

With user changeable flash tubes, switchable modelling lamps, fan cooling and Infrared sensors you can enjoy the best features available today. In addition to the EX300 the new EXD400 offers a full array of enhanced Digital features: with an intelligent and user configurable sync controls to a Digital readout with Auto power dumping when the power level is reduced. Ideal when you just want to reduce the power by a small amount the next shot will have the correct level of light.



The EX family starts at just £269.99 inc vat. To find your nearest dealer log on to our website

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# Andy Rouse @AP

Thoughts from a wildlife photographer's world



**THE RUT** is the annual mating ritual whereby mature (male) stags compete for mating rights with the (female)

hinds. It occurs from around mid-September until the end of October, during which the stag rounds up a group of hinds into a harem, and must then protect them from the advances of other stags, which it does by endlessly patrolling around the harem and roaring at or chasing off its rivals. Sometimes, when the two rivals appear evenly matched, a clash of antlers may occur, and stags sometimes sustain serious injuries. On rare occasions, the antlers of fighting stags become so entangled that they cannot unlock them and both starve to death. The most successful stags can collect a harem of up to 40 hinds, and when not patrolling they spend their time mating with them. During this time, the stags eat very little and can emerge from the rut thin and exhausted, having lost as much as 20% of their body weight. Yet it seems the stags can be shy, too. In 2009 it was reported that in the New Forest, which has some of the most established red deer herds in England, the rut failed to happen in the face of overwhelming public interest.



**ANDY ROUSE** is one of the world's most prominent wildlife photographers and a passionate

conservationist. A professional photographer for more than ten years, Andy has worked in every corner of the planet and photographed everything from ladybirds to elephants. He has a dozen books to his name and regularly appears on TV. He has also won multiple wildlife photography awards.

In this weekly column, Andy recounts some of his experiences, shares his thoughts and highlights issues from the wildlife world. You can see his work at [www.andyrouse.co.uk](http://www.andyrouse.co.uk) and read his blog at [www.andyrouse.co.uk/blog.asp](http://www.andyrouse.co.uk/blog.asp). You can even become a fan and keep up to date with 'Andy Rouse Wildlife Photography' on Facebook.

## Andy enjoys the thrill of the hunt in the Scottish Highlands

### THE DEER HUNTER



**CRAWLING** through heather-clad hillsides, soaked to the bone and stinking like a male red deer's sweatiest sweaty bits is not everyone's

idea of fun. But it's certainly mine, and in the early autumn my thoughts turn to the red deer rut in Scotland. There are other wild red deer ruts, notably on Exmoor and in the New Forest, but for me there is nothing like the prehistoric call of a red stag echoing down the Scottish glens. Poetic it certainly is, easy it certainly isn't.

Stalking wild red deer, as opposed to park deer, is a real test of one's fieldcraft ability and for me is the ultimate one-on-one challenge. It's a bit like the sport of fencing: you are totally on your own and have to use all your skills to avoid any contact whatsoever with the 'other side'. Unfortunately, though, my promising fencing career ended when I told an umpire to 'F\*\*\* off and get some new glasses' after a very poor decision during a championship!

Red deer stalking is a real challenge on several levels. For a start, the habitat can make it very difficult to conceal oneself as it is just bare open hillside with occasional gullies and low heather. Then there are the watching eyes, and there are lots of them. You have to crawl *all* the time because one mistake where you break the horizon will be the last for the day, as those eyes will see you. Crawling also means you stink of deer pheromone within five minutes, which is fine until you meet an amorous stag with a twinkle in its eye. Gear wise, forget taking a rucksack or anything else for that matter, as anything attached to your exterior soon becomes caked in mud and snags on every branch. So I just take a fixed 300mm lens that I crawl with like a soldier with a rifle, and stick a small wideangle in my gamekeeper's pouch at the back of my jacket.

Days are long, from dawn to dusk, and after a few days I am always knackered despite being fit. So much so that in the middle of the day, when the light is at its worst and the deer are resting, I usually find a deep gully with a stream and take a nap.



© ANDY ROUSE

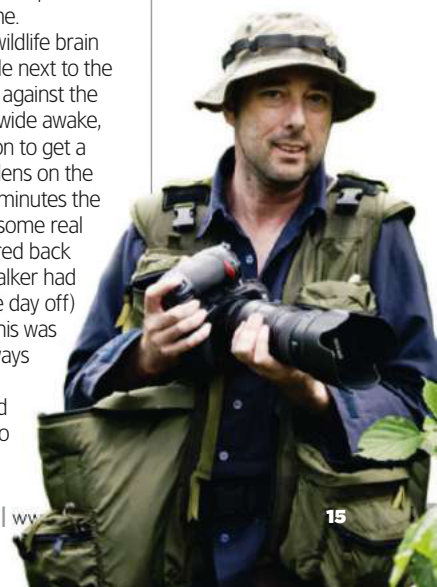
Red deer stag at sunrise in the Scottish Highlands

From a fieldcraft point of view, it works well as it keeps me out of sight for a while and any passing deer will hopefully be none the wiser. The stream is vital, as the noise covers any sound coming from my mouth!

Turned you off yet? I hope not, as deer stalking is the ultimate challenge. A couple of years ago I spent a week stalking on one of my favourite Highland estates; it was an amazing time. I had some great close encounters on the hillside, with a stag roaring against an approaching thunderstorm and some nice herds shot wideangle against the mountains behind. After six days, though, I was knackered and fully admit that on day seven I did not get up but stayed firmly rooted to the bed as dawn approached. A knock at the door and the stalker entered (I had been staying with him), telling me that I needed to get up and come stalking. I looked at him bleary-eyed as he walked to the window, quietly opened it, then bent down and threw my lens onto my lap. He motioned to the window; I dragged myself up and blinked at the scene before me.

As I blinked twice and my wildlife brain took over. There on the hillside next to the house was a stag silhouetted against the morning sun. I was suddenly wide awake, dialling in -2/3EV compensation to get a silhouette and balancing the lens on the edge of the window. For five minutes the stag posed for me, and I got some real classic shots before it wandered back over the brow. By now the stalker had retired back to his bed (a rare day off) and I happily did the same. This was proof that deer stalking is always unpredictable and you don't always have to smell like a red deer's sweatiest sweaty bits to get the shots! **AP**

**'For five minutes the stag posed for me and I got some real classic shots'**



BRINGING  
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EXPERT ADVICE  
EVERY WEEK

# PHOTO INSIGHT



## DAVID NOTON

One of the foremost travel and landscape photographers working today, David Noton tirelessly travels the world in search of new challenges, which he shares with you here

**David Noton explains the highs and lows of colour temperature and why simplicity is the way forward when composing images**

**FOR BETTER** or for worse, I like to work with the light Mother Nature gives me. Sometimes, as you saw in my last column in AP 14 August, she makes it easy for me and I can capture resplendent colour and dramatic skies. At other times, such as in this scene from Snowdonia in North Wales, all the elements of nature are working against me.

This was taken very early one morning, just as the sun was coming up on an overcast day. I was stood on a hilltop overlooking the Mawddach Estuary. It was a cold morning with limited visibility, and I wanted my image to reflect these conditions.

As I always try to work with the natural light that I'm given, I don't tend to correct colour temperature – and the colour temperature that morning was quite high. For those unfamiliar with how colour temperatures work, the higher colour temperatures (5,000K or more) are known as 'cool' colours and appear as a blueish-white. Lower colour temperatures (2,700–3,000K), on the other hand, are called 'warm' colours and can appear as a yellowish-white up through a rich red.

I had set my Canon EOS-1Ds Mark III to its daylight white-balance setting, which recorded that morning's cool-blue light as it actually appeared. I tend to shoot using the daylight white balance setting most of the time, as it records the most realistic version of the light that's in front of me. At other times, I will set the white balance manually.

Some people like to correct their colour temperature or trick the camera into recording warmer colours by switching their white balance to the shade setting, which is fine – it's just not what I tend to do. I hardly ever adjust colour balance if I can help it.

When looking at a scene, such as this one, I look at the elements and decide what's most important. On this morning the cool-blue light was dominating the landscape so I knew I had to preserve that.

Next, I looked at the other elements of interest and decided what should be included in the frame and what didn't deserve to be in the picture. What makes this image work for me are the shapes of the mud flats and the curves of the estuary along with the receding plains

of the mountains beyond. In the low light and with its dominating blue tones, I knew these shapes had a lot of potential to make a strong graphic image.

I knew that I had to compose my image carefully if I was going to preserve the effect of these elements. I played around with the focal length and determined that going wide would take away all the impact of that

mountain environment. So this for me was a case of going long. I mounted my 70–200mm zoom and settled on a focal length of 90mm. The last thing I do before I take any picture is to sweep my eye from corner to corner across the frame.

This was a picture built around one colour, with strong and bold, yet simple shapes. In my opinion, the best compositions are always

© DAVID NOTON



AP readers can see David at his next **Chasing the Light Roadshow** in Edinburgh on Tuesday 28 September at the Royal College of Physicians, 9 Queen Street, Edinburgh EH2 1JQ. Tickets are available at [www.davidnoton.com](http://www.davidnoton.com)





the simplest. So again, I asked myself, what doesn't deserve to be in the frame?

Your natural tendency is to go wide to include more elements in your frame, particularly if you are in a stunning place like Snowdonia where fantastic pictures can be found all around you. Yet, by going wider and incorporating more, you run the risk of muddling your composition and taking

the impact away from the one subject that deserves it. If there's one distracting thing in your composition, the entire picture loses impact. Less is definitely more.

In my case here, there was a pile of interesting rocks in the foreground where I stood, just below where I cut off my frame. In the late summer, when the colours are warmer, this might have been an appealing

foreground to use. In October, though, when I shot this, there wasn't much colour and the foreground rocks wouldn't have brought anything to this picture apart from a possible distraction. If you practise simplicity in your compositions, your viewers will have fewer such distractions and your message will be clearer, whatever it is you are trying to photograph. **AP**

**David Noton**  
*was talking*  
**to Jeff Meyer**



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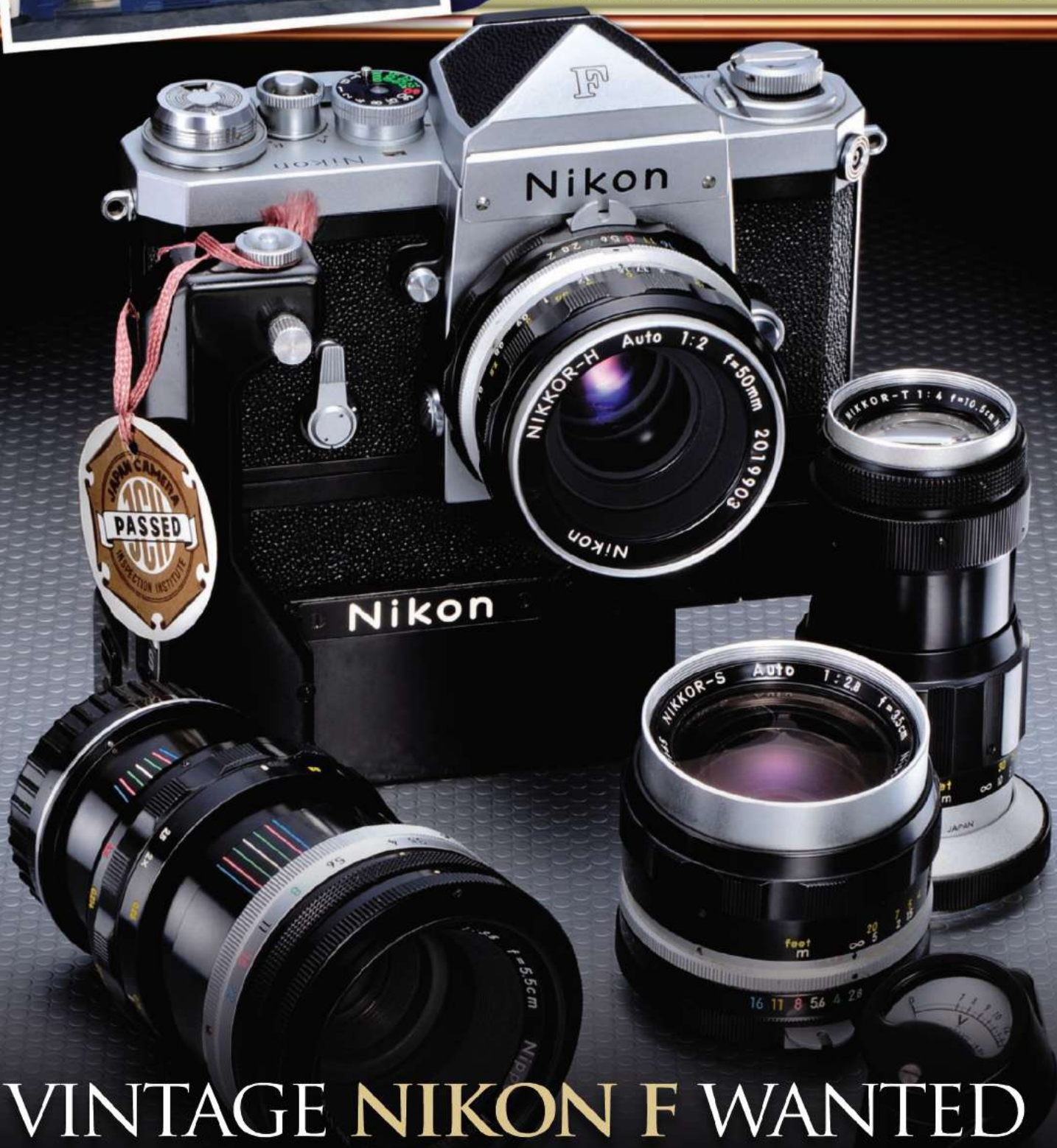




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GRAHAM PARRY

## The Amateur Photographer Masterclass with Paul Hobson

### British Wildlife Centre

#### Location

Situated in the heart of Surrey, the British Wildlife Centre (BWC) was founded in 1997 by former Jersey dairy cow farmer David Mills. There are 40 species of British wildlife at the centre, including badgers, foxes, otters, stoats, weasels and red deer. The animals live in settings that reflect their natural environment and much of the site is outdoors, although there are undercover areas such as the Barn, the Hedgerow and an observation Badger Sett. Keeper talks take place every half an hour. The British Wildlife Centre, Eastbourne Road, Newchapel, Lingfield, Surrey RH7 6LF. Tel: 01342 834 658. Email: info@britishwildlifecentre.co.uk.

#### Opening times

Open every weekend and public holiday from March until the end of October, and daily during school holidays from 10am-5pm (last admission 4pm). This year's holiday opening timings are 24 July-5 September, 23 October-31 October and 27 December-3 January.

#### Admission charges

Adults £10, seniors £9, children (aged 3-15) £7.50, family ticket (two adults and two children aged 3-15) £32. Children under three years free.

#### Workshops

The British Wildlife Centre runs photographic days where photographers have access to some enclosures. For more information visit [www.britishwildlifecentre.co.uk](http://www.britishwildlifecentre.co.uk).

# Wildlife

**Paul Hobson** explains how to achieve fantastic animal portraits in a captive setting. **Gemma Padley** reports

**WE'VE** all been on family days out to wildlife centres or zoos and taken snapshot pictures of the animals, but creating powerful animal portraits takes a little more skill and thought. In this month's AP Masterclass, Paul Hobson and three readers travel to the British Wildlife Centre in Lingfield, Surrey, where Paul shows the readers how to take high-quality portraits of the different species kept there.

'The aim of today is to create strong animal portraits,' says Paul. 'There is a huge variety of animals so we have plenty of material to work with. Key things to think about include how to frame your shot to create a composition with impact, choice of background and how to make the animals look as though they are in a natural environment. Also, think about what ISO, white balance and camera mode you are using. On a bright day like today, I would suggest ISO 400; if it gets cloudy you can always increase it. I also advise shooting in aperture-priority mode as this allows control over depth of field.'

Paul explains that the readers will need an aperture that allows a fast enough shutter speed to ensure the animal is sharp. 'As

a guide you want the shutter speed to be roughly the same as the size of your lens; for example, 1/200sec if you are using a 200mm lens,' he says. 'However, shooting at ISO 400 will give very high shutter speeds anyway – perhaps even 1/1000sec.'

The readers brought their own cameras, lenses and tripods with them. Paul suggests a 100-400mm zoom lens is ideal, although the readers used other telephoto zoom optics. 'The advantage of an animal centre is that you can get close to animals that might be more difficult to capture in the wild,' says Paul. 'We'll also spend time with a keeper in the fox and otter enclosures and photograph owls up close.'

'Keep checking your exposure throughout the day and take into account the direction of the sun and how the shadows are falling on your subject,' he adds. 'Use exposure compensation if necessary.'

The readers can use a tripod or handhold their cameras. 'Decide which approach is best for a particular subject,' says Paul. 'When you're framing a shot, think about whether you are shooting in portrait or landscape format.'





## Your AP Master... Paul Hobson



Paul, who is based in Sheffield, studied environmental science at Sheffield University and has worked as an environmental sciences lecturer for 25 years. With more than 20 years' photography experience behind him, Paul became a full-time wildlife photographer in 2009. He was specially commended in the 2008 Wildlife Photographer of the Year competition and two of his images were exhibition finalists in the British Wildlife Photography Awards 2009. Paul regularly lectures on wildlife photography and also runs workshops.

[www.paulhobson.co.uk](http://www.paulhobson.co.uk)



GRAHAM PARRY

## Diana Gamble



Diana, 61, is a PA and lives near Brackley, in Northamptonshire. She uses a Canon EOS 5D Mark II with a 100-400mm lens. 'Paul was a great teacher and I learnt a great deal,' she says. 'I learnt to stand back and look at the situation before rushing in to take a picture, and noticed the difference that framing the subject makes to the power of the final image.'

## Graham Parry



Graham, 60, is a retired professional engineer who lives in Rainham, Essex. He uses an Olympus E-3 with a 50-200mm lens. His photographic interests include people, architecture and abstract digital creations. 'I thoroughly enjoyed myself and learnt a lot about an area of photography I had very little experience in,' says Graham. 'I shall apply some of the techniques I learnt today in my future work.'

## Katie Blackmore



Katie, 31, lives in Witham, Essex. She uses a Canon EOS 1000D with a 70-300mm lens. 'I was hoping to learn a few new skills, which I did,' says Katie. 'It was interesting trying different shooting angles'. To see more of Katie's images visit [www.bewitchedphotography.co.uk](http://www.bewitchedphotography.co.uk).

## Choosing a background

**ONCE** you have decided what you are going to photograph, it is important to think about what is behind your subject. 'Try shooting slightly wider to show more of the animal's surroundings,' says Paul. 'Think about how you can use vegetation to frame the animal.' If you are incorporating the background into your shot, make sure it doesn't lead the

eye away from the subject – foliage should complement, not overpower the composition. In Katie's image of a fox, for example (see below), she uses the surrounding tree branches and grass to frame her subject. Combined with the shadows created by the warm late-afternoon light, this creates a very natural-looking composition.

**'Try shooting wider to show the surroundings, and use vegetation to frame the animal'**

## The natural look

**PHOTOGRAPHING** animals in captivity requires a different approach to capturing them in the wild. While some considerations are the same, such as the need to be patient and approach animals slowly, when it comes to composition even more thought is needed. 'We're photographing animals in a captive environment, so try to find a way of making the animal look as though it is in its natural setting,' suggests Paul. 'A water vole coming out of a tube is not a true representation of how it would look in the wild, so try to frame your compositions to exclude man-made details. Is there a post, a fence or a person in the composition? Ask yourself, "How can I compose this shot to make it look as natural as possible?" Look for areas of shrubbery that are wild and wait until the animal moves into a spot that looks more natural.'



KATIE BLACKMORE





DIANA GAMBLE



DIANA GAMBLE

## Positioning the subject

**WHERE** the animal appears in the frame will affect how the viewer 'reads' the image. For example, a fox positioned in the centre will be especially impacting. If the animal is slightly to the side, the effect will be more subtle. 'With an animal portrait you're looking for the animal to be quite large in the frame,' says Paul. 'Think about how the animal relates to its surroundings. Try to compose your shot so the animal is obvious in the frame, but it balances with other subjects. Leave space so the animal is "looking into" the frame and think about how much of the animal to include in the shot.'

'Don't feel you have to fire off hundreds of frames the moment the animal appears,' he adds. 'Sometimes it is better not to take the photo immediately, but just sit and watch for ten minutes and get used to how the animal behaves. You can't make animals do what you want them to do as they will go where they please, but if they do something interesting be ready to capture it.'

**'Getting down low so you are eye-to-eye with the animal will lead to more intimate images'**



PAUL HOBSON

## Experimenting with viewpoint

**THERE** isn't one viewpoint that works better than another. You may find that crouching down low or lying down leads to a strong composition for one subject, but shooting from a slightly raised viewpoint and at an angle works better for another. Bear in mind that getting down low so you are eye-to-eye with the animal will make it feel less threatened and lead to images that are more intimate. 'The shooting angle makes a huge difference to the look of your image,' says Paul. 'For example, if you crouch down and include foliage in the foreground, you can give the impression of being in the animal's world. Most importantly, decide what it is you want from your composition before you take the picture.'



KATE BLACKMORE

## Watch how the animal moves

**SOME** animals move so fast you have to be on the ball to capture them. 'The smaller mammals won't stop to pose while you compose your shot,' says Paul. 'Look at where they move in the enclosure and be prepared to react quickly.'

During the day the readers photographed stoats, polecats and weasels that popped up from their burrows without warning and moved at lightning speed. In an attempt to

capture these flighty creatures they trained their cameras on a spot where the creatures appeared and tried to anticipate where it would appear next. Paul advised the readers to take note of the animal's route. 'The animals tend to have "favourite runs" and if you look carefully you'll notice certain behaviour patterns,' he explains. 'Keep your eye tuned in – you only have a split second to take the shot.'



## Multiple animals

**IF YOU** are featuring two animals in the frame, think about how you can position each one to create balance and interest. Try to capture a sense of interaction between the animals. For example, in Katie's image of two owls (see below) she angles her camera so that one owl is slightly behind the other and chooses a shallow depth of field so the owl in the background is slightly blurred. Katie creates a composition that grabs the viewer's attention and retains it. Likewise, Graham captures the playful interaction of polecats in his image (see right).



GRAHAM PARRY



GRAHAM PARRY



KATIE ELACKMORE

**'An animal's eyes are a natural focus point, so make sure they are completely sharp'**

## Depth of field

**PAUL** encouraged the readers to experiment with a shallow depth of field, to minimise distracting backgrounds. 'Try throwing your background out of focus to concentrate attention on your subject,' he explains. 'An aperture of f/4 or f/5.6 is a good option. In animal portraits you don't want the viewer's eye to be led away by other details – the distracting edge of a fence, for example. If you have a depth of field preview button, use this to check your depth of field before taking the shot.'

**'Try throwing the background out of focus to concentrate attention on your subject'**



DIANA GAMBLE

## Choosing a focal point

**IF THE** animal is not moving fast you have time to think about your point of focus. Later in the day, the readers had access to several of the animal enclosures where they spent time photographing foxes, otters and owls. Although the otters moved very fast and were difficult to photograph, the foxes stood still and the owls hardly moved at all. This made choosing a focal point easy. 'When handholding and tracking a fast-moving animal, you are better off using autofocus,' says Paul. 'But if you are using your camera on a tripod and the animal is relatively still, manual focus might be more suitable. If the animal is stationary I wouldn't advise using "servo" autofocus because the lens may "hunt" as it searches for the subject. However, this mode is great for animals that are moving very fast.' An animal's eyes are a natural focus point and if you are going for a close-up, make sure they are completely sharp. You don't have to focus on the eyes, however – you could try focusing on the animal's claws if it is holding food, as Graham has done in his otter image (above).





KATE BLACKMORE

## Coming in close

**THERE** are occasions when a tight crop is preferable and sometimes even necessary, such as when it is not possible to adjust your shooting angle to avoid distracting details in the frame. Another reason for tightly

cropping an image is to make sure your composition has impact. 'If you home in on a fox's face, you'll capture its expression,' says Paul. 'A vertical shot of a fox's head and shoulders makes a powerful composition.'



GRAHAM PARRY

## Try something different

**BESIDES** the traditional animal portraits, Paul encouraged the readers to experiment with more unusual shots. Inside, the readers photographed brown rats darting through plastic tubes. Shooting into the light, they used backlighting to create silhouettes. In Graham's image (above) the rat becomes a shadowy blur. An unusual composition,

it causes the viewer to question what the scene is showing and injects a narrative element. The readers also experimented with less traditional framing – including only part of the animal, for example. Composing a shot in this way can lead to interesting compositions that hint at a subject rather than present it in its entirety.

## Shooting through bars and wire mesh

**SOMETIMES** when shooting animals in captivity you are restricted by the height and angle of the fences around the enclosure. Fortunately, the British Wildlife Centre actively encourages photography and the site has been designed with photographers in mind. Many of the enclosures have low fences and where there is wire mesh it is often wide enough to photograph through. 'If you push your lens right up against one of the gaps, you can usually get a clear view,' says Paul.



GRAHAM PARRY



## Would you like to take part?

**EVERY** month we invite three to five AP readers to join one of our experts on an assignment over the course of a day. The experts are **Lee Frost** (landscapes), **Brett Harkness** (portraits), **Paul Hobson** (wildlife) and **Clive Nichols** (gardens). This is Paul's final *Masterclass* this year. Brett will appear in October, with Lee in November and Clive in December.

If you would like to take part, visit [www.amateurphotographer.co.uk/masterclass](http://www.amateurphotographer.co.uk/masterclass) for details of how to apply. Please remember to state which *Masterclass* you would like to attend and make sure you include your name, address, email address and daytime telephone number in your application. Each participant will be able to use his or her own camera, lenses and other equipment.

## Fill-in flash

**IF YOU** are photographing inside a building, you may need to use fill-in flash as well as increase your ISO setting and/or use a tripod. 'Check with a keeper that you are able to use flash, as some animals will be more sensitive to this than others,' says Paul. 'If you are shooting into a glass enclosure, beware of flash bouncing off the glass and causing flare. On a bright sunny day you could use fill-in flash outside to lighten some of the shadows. Don't forget to check your exposure and be prepared to adjust the intensity of the flash if needed.'





# Delta force

As the oil spill in the Gulf of Mexico shocks the world, petroleum exploitation in the Niger Delta has been devastating the local environment for 50 years.

Photojournalist **Ed Kashi** tells **Jeff Meyer** how he gets the access to tell a story few other journalists have told



A boy carries a freshly killed goat through the smoke and haze of burning tyres



Oil pipelines create a walkway for this young woman through Okrika Town

**OIL DEPENDENCY.** It might be the most under-reported story of modern times. The Age of Oil has filled our tanks and bellies with the energy and wherewithal to expand our cities and populations. It has kept us warm and informed, and made tycoons out of poor dirt farmers. It has globalised trade. But this dependence has also fed the flames of many of the world's recent conflicts, and increasingly it is blamed for harsh changes to our environment. As the mammoth oil spill in the Gulf of Mexico now places our petroleum consumption under closer scrutiny, it's somewhat serendipitous that photojournalist Ed Kashi's book exposing one of the longest running oil disasters in history should go into second print.

In making *Curse of the Black Gold*, the award-winning photographer traces 50 years of devastation in Nigeria's impoverished Niger Delta region. From charred landscapes and contaminated water to disease and political instability, Nigeria's much-heralded role as one of the world's top oil suppliers has a dark underbelly that isn't often reported. In what should have been a boon for local Nigerians, Ed sought to reveal the devastating impact of the scramble for African oil.

Having spent some time working in Iraq, Ed was between projects when he was approached in 2004 by Professor Michael Watts (who edited *Curse of the Black Gold*), of the University of California, Berkeley, who had seen Ed's work and wanted him to

photograph the disaster in the Niger Delta.

'Michael has been going to the Niger Delta for 30 years,' says Ed. 'He invited me to work with him on a project he was doing there based on what he'd seen of my work in Iraq. The idea interested me straightaway, but I was more like, "I'll believe it when I see it." It's nice enough when a magazine or foundation presents a new project, but when an individual professor comes to you you're a little more sceptical about how it's going to work.'

The trip was successful, though. Ed then made subsequent visits, spending in total about five months in the Niger Delta over parts of 2004-2006, photographing villages where crops fail to grow under acid rain caused by gas flares, inside the homes of local leaders, amid large open-air abattoirs and within the ranks of armed militants enraged by years of oil companies operating without supervision.

Despite having been in Iraq, Ed counts the Niger Delta as one of the most difficult places he has ever worked. His style is to get up close to his subjects when he photographs them, but the Niger Delta is not a very trusting environment. 'People assume that any foreigner is with the oil companies – because often they are,' he says. 'As a result, there's definitely a paranoia and a dislike of the camera there. People see you and think, "What's that for? Will this bring trouble?"'

The only saving grace, he adds, is that people and things don't spontaneously

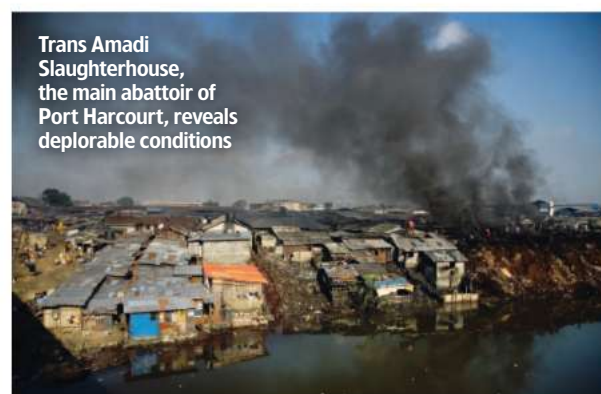
explode like they do in Iraq and Afghanistan. 'Terrorism is a real mindbender,' says the former World Press Photo winner. 'It's very, very hard to work in that sort of environment. At least in the Niger Delta I knew that if I were to be kidnapped or taken by militants they wouldn't hurt me, unlike al-Qaeda. So while it was stressful and intimidating at times, I felt safe knowing that people weren't out to kill me.'

'I hope that aspect never changes in the Niger Delta, but there are already some worrying signs. By the time I was concluding my project, my contacts wouldn't allow me to go out after dark, not even to get food. Security was starting to become a big issue.'

As well as a general suspicion of outsiders, the region's terrain also made work difficult. Many oil sites and other points of interest are

**Opposite top:** Villagers in Kpean monitor blazing fires caused by a leaking Shell oil wellhead. The local people await the company's arrival to extinguish the flames

**Opposite bottom:** Workers push heavy barrels from the waterfront into the main market of Yenagoa, capital of the oil-rich state of Bayelsa



Trans Amadi Slaughterhouse, the main abattoir of Port Harcourt, reveals deplorable conditions





ALL PICTURES © ED KASHI

remote and can only be reached by boats or dangerous roads. Getting access to these places (and the people within them) was also a major obstacle, not to mention the inherent dangers of the locations themselves.

Working with non-governmental organisations (NGOs), Ed was able to resolve many of his access problems in advance. His contacts at a number of NGOs (working on everything from environmental issues and human rights to the redistribution of oil wealth) knew people on the ground who were supportive of what Ed was trying to do and introduced him to drivers, translators, gatekeepers and potential subjects in the Niger Delta region.

'I was able to vector in at this high level,' Ed recalls. 'Anywhere else in the world I would have been jailed or deported in a week without these contacts. Any time you go below the surface and talk to militants and investigate the oil companies, you're going to meet resistance on a number of fronts. You rely on your contacts – and especially the contacts of your contacts.'

Many times, however, even getting access through his contacts wasn't straightforward. Intense corruption in the region also contributed to making this project one of Ed's most difficult endeavours to date. Many sources and subjects demanded payment before they would speak with him. 'I'm pretty hardcore about not paying sources or subjects,' Ed says. 'I tried to handle it in as graceful a way as possible. On



## THE FUTURE OF STILL IMAGES

Ed has worked with video technology for the past ten years, and now he regularly shoots videos on his Canon EOS 5D Mark II at the same time as he takes stills. While there is much debate about the merits of both media, Ed believes both have a solid place in the future of news reporting.

'The fact is that the impact of still images has become stronger because people want to read less,' he says. 'There's an enduring power with still imagery that isn't simply going to go away just because this other new medium arises.'

'The main by-product of the rise of video is that we're now moving away from the sanctity of the decisive moment,' he adds. 'We now look more to build and grow on past work, and tell more complete stories. I don't reject the decisive moment entirely in my photography, but I do try to come up with new ways of presenting ideas.'



Right: A boy selling drinks at the slaughterhouse. Nearly all the workers there, especially the meat handlers, are Hausa and Yoruba Muslims

**'If it's a scam that works for them, who am I to question that?'**



reflection I realised that for hundreds of years people have been taking things from these people. So when I want access to their village, their attitude is that you have to give me something. It's not so much the amount, but the principle.'

However, Ed did set a rule that he didn't want to exchange the money physically. To get around this he gave his guide or fixer the equivalent of about \$10 (around £6) to hand over if asked so it wouldn't get in the way of what he had to do.

Even the guy working at the gate of the compound where Ed stayed wanted money, he recalls. 'I'd be working and my energy would run out and have to ask him to turn on the generator. It's his job, of course, but he wanted cash to do it. It was frustrating, but then these are all people who are very poor, so one shouldn't judge. Everybody's got to survive. As I get older and see more, I realise this. If it's a scam that works for them, who am I to question that? The world is a murky place.' **AP**

**Above: In the village of Oporoza, three of nine fighters from MEND (the Movement for the Emancipation of the Niger Delta) killed in a military attack are laid to rest. MEND militants had just negotiated the release of a Shell worker taken hostage. While on the way back through the creeks to deliver the worker to freedom, Nigerian military boats ambushed the group and killed all nine MEND members as well as the Shell worker**



## GETTING CLOSE

Unlike other photographers who rely on long lenses to bring them close to their subjects, Ed likes the effect of being physically close. To this end, he carries just one camera, a Canon EOS 5D Mark II, and a few lenses. His mainstay is a 24-105mm zoom, which lets him get right up close to a person or situation, or allow him to fall back to a comfortable distance if necessary.

'The key to getting close to people is that you don't appear aggressive,' says Ed. 'I'm not an aggressive person, and I think people see that in the way I move and treat people. Also, I do a lot of shooting from the hip because there are times when you can't bring your camera up to your eye.'

'There's no exact prescription because every situation is different. Generally, I try not to speak to people or draw attention to myself because they immediately change their behaviour, but neither do I try to be sneaky or deceptive.'

'Most of the time, when I'm following my subjects I'm looking at the world from multiple planes of composition: foreground, middle and back, as well as left to right. As a journalist, I'm constantly asking myself what the elements are that I need in the frame, and what the relationship is between those elements so the image can have power. A lot of times I have to figure this out in a matter of seconds.'



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# AP Appraisal



Expert advice, help and tips from AP Editor **Damien Demolder**

**'I've removed the houses to show what the scene might have looked like'**

**PICTURE OF THE WEEK**



**Original**



**Edited**

## **Sun through trees** **Peter Brewster**

Canon PowerShot A650 IS,  
1/125sec at f/4, ISO 80

**I'VE NEVER** done a proper survey on this, but I bet that in 85% of cases it is just a single element of a scene that makes us take a picture. One aspect of the view is overpoweringly attractive, and compels

us to record it. Of course, when we review the captured image we see the thing that stopped us in our tracks, but then notice the other things we've captured that we didn't acknowledge at the time. Here I'm certain it was the sun shining through the trees that caught Peter's eye. Unfortunately, though, he has also taken a picture of those houses right in the middle of the frame – and they rather take away from the subject matter.

To me, the important things in the shot are the sun, the trees, the shadows and the colour, so I've tried to reduce the image to those. I've removed the houses to show what the scene might have looked like had Peter found an angle that didn't show them. I then used Curves to intensify the relationship between the sun streaks and the shadows on the grass. To emphasise them further I made a green-channel black & white conversion, which I then coloured using a 10% opacity fill layer and tinted with a sample of the green from the original picture. Darkening the edges and corners has also helped to concentrate attention on the middle of the scene.

Peter spotted the potential here and I've just jazzed it up a bit. For that he wins my picture of the week – and he used a Canon PowerShot A650 IS compact camera, too!

## **WIN**

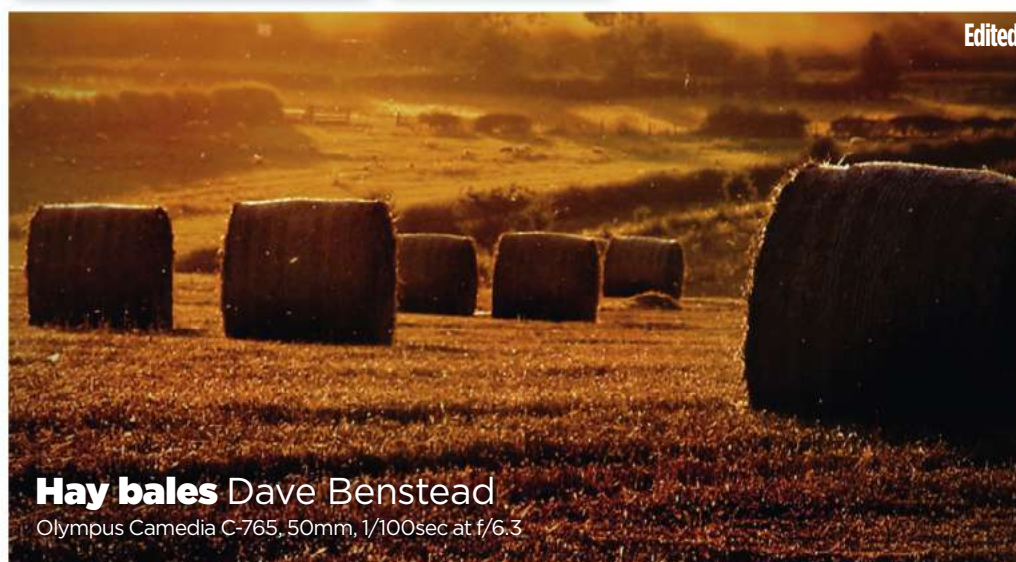
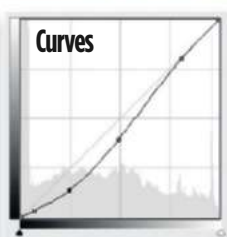
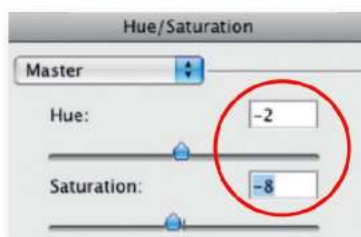
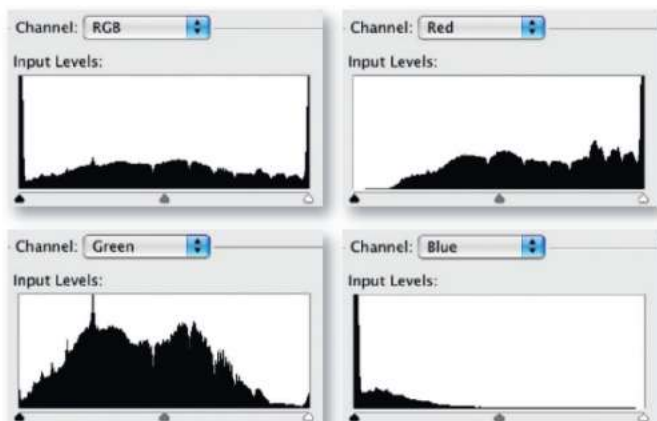
Damien's picture of the week wins a £50 Jessops store voucher\*. The two runners-up each win a £25 voucher\* to spend on photobooks from Jessops' online service at [www.jessops.com](http://www.jessops.com).  
\*UK residents only

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Send up to six prints, slides or images on CD (please include the original files from the camera along with your submitted versions on your CD). Tell us a little about the pictures and, if you can, include details of equipment used and exposure settings. Send your photographs to 'Appraisal' at our usual address (see page 3). Please enclose an SAE if you would like them returned

**JESSOPS**  
Advice for Life





## Hay bales Dave Benstead

Olympus Camedia C-765, 50mm, 1/100sec at f/6.3

**THIS IS** another well-spotted view that has some wonderful elements within it, but as is so often the case, translating the potential into success is harder than it seems. The main issue with Dave's sunset scene is the powerful primary yellow of the picture. Looking at the Levels histogram for each of the colour channels, you can clearly see there is hardly any blue in the shot, no red in the shadows and not enough green in the midtones. I used Levels for each channel to balance things up a bit, but there isn't enough blue captured to be able to fix the colour properly. Still on the colour, I used the Hue and Saturation tool to shift the hue away from green and then reduced the total colour saturation of the picture – it was a touch strong.

You can see from the Curves window that I've introduced a little more contrast, but also darkened the shot as a whole. This gives the scene a more sunset-like atmosphere.

Cropping the picture, but using the same 16x9 proportions as Dave, I've trimmed the bright patches of sky that draw the eye out of the scene so it is easier to concentrate on the subject. Finally, I applied some Unsharp Mask to crisp up the hay bales, but by masking off the foreground I've avoided accentuating highlights that would look unnatural. It's a lovely shot, Dave, but be careful with your colours and exposure.

## Positively glowing Alex Ulivi

Canon EOS 5D Mark II, 70-200mm, 1/60sec at f/4, ISO 50

**THE OLD** rules say that a photographer should have the sun peeking over his shoulder, and while that still stands as decent advice it really is part of the very old rules. To create a difference in your images rules can be broken, and here Alex has done just that to great effect. Asked to photograph his friend Laura, Alex decided to shoot 'almost directly into the sun' to get this soft effect – and it has worked very well.

It may be a matter of taste, of course, but there is a touch too much yellow in the sky for my liking, and while this is a shot that doesn't pretend to represent colours with clinical accuracy, the degree of basic yellow with a touch of green in an area that should be white, seems offside to me.

To alter the colour cast I've simply used the Hue and Saturation tool to shift the general hue two points towards magenta and then I did the same for the yellow channel with the addition of -8 yellow saturation. While wanting to maintain the softness of the shot, I've darkened the shadows to deliver a fraction more impact and give the shot a bit more 'bass'.

You can see that the changes are slight, but the overall difference is significant. It's a great shot, Alex. I bet Laura was delighted with it.

### Original



### Edited







Sandymouth, Bude  
Chris chose this location  
because of the variety of  
textures in the wet sand  
Nikon D80, 10-20mm, 1/4sec  
at f/22, ISO 100, tripod



AP publishes more reader photographs than any other photography magazine

# ReaderSpotlight

## Chris Small Cornwall

Chris, 25, is an avid walker and started taking photographs to show his friends and family the places he had visited. 'I've always enjoyed walking through the Devon and Cornish countryside,' says Chris. 'Eventually, I started visiting locations solely to take photographs. I am lucky to have grown up in Bude, Cornwall, where there are stunning photo opportunities everywhere. Photography is a great way to explore the countryside and is limited only by your imagination.' Chris hopes to photograph all the accessible locations along the Cornish coast. To see more of Chris's images visit [www.northcoastphotography.co.uk](http://www.northcoastphotography.co.uk).

### Sunset... 1

1 Composing his shot to include Gull Rock in the distance, Chris combined four exposures for this image of Trebarwith Strand, Tintagel

Canon EOS 5D Mark II, 15-30mm, 1sec at f/29, ISO 50, tripod

### Sunset... 2

2 'Sandymouth in Bude offers a huge variation of foreground interest, with stunning cliff formations and beautiful sunsets,' says Chris. 'It is one of my favourite locations'

Nikon D80, 10-20mm, 1/4sec at f/22, ISO 100, tripod



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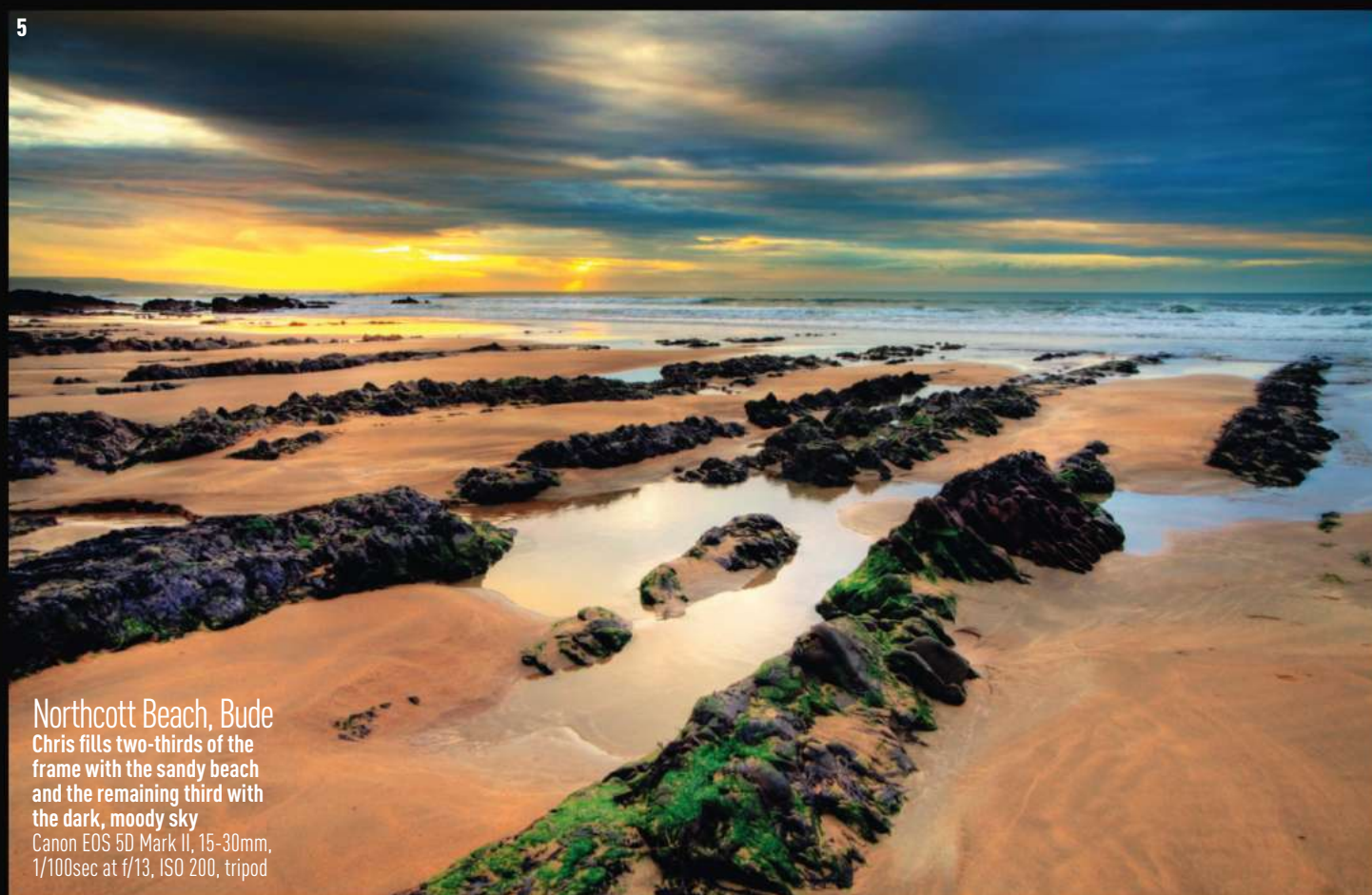


4



**Sunset over boulders**  
Boulders at Duckpool Beach,  
Bude, reflect the sunlight and  
create beautiful colours  
Nikon D80, 18-135mm, 1/100sec  
at f/13, ISO 100, tripod

5



**Northcott Beach, Bude**  
Chris fills two-thirds of the  
frame with the sandy beach  
and the remaining third with  
the dark, moody sky  
Canon EOS 5D Mark II, 15-30mm,  
1/100sec at f/13, ISO 200, tripod





### Coastal sunset

**1 A sunset sky in Charmouth Bay, Dorset**  
Canon EOS 450D, 18-55mm,  
1/125sec at f/16, ISO 100,  
tripod

### Twinkling lights

**2 Bedford Embankment in Bedfordshire at night**  
Canon EOS 450D, 18-55mm,  
70secs at f/11, ISO 100,  
tripod

### Reflected sunset

**3 Line, shape and reflections form a powerful composition**  
Olympus E-410, 17.5-45mm,  
1/45sec at f/4.5, ISO 100

## Graham Custance Bedfordshire

Graham, 47, has been taking photographs since he was a child. 'When I take a picture I love to try to portray the moment I experiencing to the viewer,' he says. 'My passion is landscapes and seascapes. I really enjoy the solitude of early morning walks along a scenic vista or the crashing of waves along the beach.' To see more images by Graham visit [www.grahamcustance.com](http://www.grahamcustance.com).



### EDITOR'S CHOICE

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The dramatic reflections of the fiery sky would probably have been enough to make this picture exciting, but the additional impact created by the low angle and the leading-in boards makes this an exceptional picture. It's the colours and the dynamic composition that catch the eye first. A great shot.

1



### Red-eyed tree frog

1 Harry takes this frog's bulging eye as his focal point and creates a perfectly composed image  
Nikon D40, 18-55mm, 1/60sec at f/5.6, ISO 400

## Harry Allard Hertfordshire

Harry, 16, bought his first DSLR two years ago. 'I was given a compact camera that I used to photograph animals and insects,' he says, 'but on my 14th birthday my mum and I decided to each buy a Nikon D40. I try to take as many pictures as I can and edit my images using the software at school. I love the diversity of the natural world, and the range of shapes and colours. I would love to photograph wildlife professionally one day.' For more images by Harry visit his Flickr page at [www.flickr.com/photos/27647911@N07](http://www.flickr.com/photos/27647911@N07).

### Bearded dragon

2 Dramatic lighting from a heat bulb emphasises the dominant stance of the lizard  
Nikon D40, 18-55mm, ISO 200

2



3



### African flower mantis

3 Harry placed the mantis, which is a pet, on a similarly coloured orchid to complement its patterns  
Nikon D40, 18-55mm, 1/250sec, ISO 400, tripod



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# AP Testbench

Over the next few pages we present this week's **equipment tests**, **reader questions** and **technique pointers**

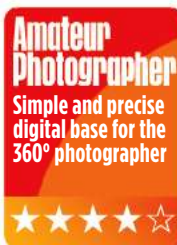
## Firstcall e-filming 360 Digital Drive Panorama tripod base £351.33

For more information visit [www.firstcall-photographic.co.uk](http://www.firstcall-photographic.co.uk)

**PANORAMIC** and 360° photography appear to be in vogue, and Firstcall's e-filming 360 Digital Drive Panorama base provides a sophisticated and user-friendly option for the SLR user. It is a simple process to attach the digital base to any tripod head and then an SLR camera, either horizontally or vertically using a bracket. The device connects to the camera via a cable-release socket (supplied for most DSLRs). By using the digital display, the speed at which the device rotates between exposures, the number of exposures and angle between exposures can be adjusted. The precision and accuracy of measurements is impressive, right down to every 0.1secs and 1°. As the camera rotates through 360°, it is important the cable is positioned so that it does not tangle with the tripod to avoid damaging the device. I would like to see a slightly longer cable supplied, or even wireless operation.

The base is powered by four AA batteries and it can be controlled by remote. Coolstitch and 3D Maker software are supplied, providing a simple platform to post-process the images. Aimed at real-estate and product photography professionals, the £350 price tag puts this niche product in the realm of the specialist landscape and architecture photographer.

**Tim Coleman**



### The AP guarantee to you

All our tests are conducted by people who understand the product area, as well as photography. We aim to discover any shortcomings, as well as finding those aspects that deserve praise. All our tests are thorough, honest and independent

## Cloud Engines Pogoplug £99

For more information visit [www.pogoplug.com](http://www.pogoplug.com)

**CLOUD** Engines' Pogoplug is an NAS (Network Access Storage) device. There are four USB ports on the Pogoplug (but no FireWire connectivity), which means it is possible to connect up to four external USB 2.0 hard/flash drives simultaneously. The data on the drives can then be accessed via the internet through a password-protected site. Files can be viewed and downloaded or extra files uploaded onto the external drive via Pogoplug. My concerns over the data residing on the network were eased, as Cloud Engines' management interface takes just a snapshot of the data on the drive. Pogoplug is simple to set up, taking me less than two minutes.

The device is reliant on good internet speeds and I found download speeds ranged between 15 and 42KB/s, but generally nearer 40KB/s, which equates to around 25 seconds to download 1MB of data. A nice touch is the slideshow creator within Pogoplug, and these slideshows can be shared too. The Pogoplug is a very useful tool for the remote sharing and accessing of data. **Tim Coleman**



**FORTHCOMING TESTS** In the next few weeks AP hopes to run the following equipment through the most rigorous testing procedures in the industry...

### HDR software

Find the perfect High Dynamic Range software for your photography.  
AP 18 September

### Canon 70-200mm f/2.8 vs Sigma 70-200mm f/2.8

The latest 70-200mm f/2.8 stabilised optics from Canon and Sigma go head-to-head.  
AP 25 September

### Panasonic Lumix DMC-LX5

Can the successor to the popular LX3 compete in today's market? We test the Canon PowerShot G11's latest competitor.  
AP 25 September

### Nikon D3100

At last, a Nikon DX-format DSLR with more than 12 million pixels. We put the D3100 through its paces.  
AP 16 October

### Canon EOS 60D

Canon's replacement for the enthusiast-level EOS 50D has 18 million pixels, a variangle screen and Full HD video.  
AP 30 October





AP explains...

# Buying a printer

**Angela Nicholson** looks at what you need to know to find the perfect printer – plus we list some of the best A3 and A2 models on the market in our buyers' guide

**NOW THAT** the majority of images are shot digitally rather than on film, a print often has a more elevated status than it used to. When negative film is used, each frame is printed routinely and the prints are used to assess the success of the shoot. Many digital photographers, however, rarely make prints until after their images have been scrutinised and perfected on a computer. Only once an image has been deemed worthy of printing is paper loaded into the printer or an order placed with a lab.

The desire to create an image that merits being made into a print and hung on the wall or placed in a portfolio is often a great motivator for many photographers. A print marks the end of a process that starts with choosing a subject and determining the correct camera settings with which to shoot it, before perfecting the image on the computer. Each step has its own challenges that need to be overcome and there can be difficult decisions to make along the way.

Naturally, once an image is deemed worth printing, you don't want to just run off a couple of copies on the office printer. Given the huge number of printers on the market, deciding exactly which one is suitable for the job in hand may seem daunting, but the information over the next few pages will make things a lot simpler.

## PRINT SIZE

When anyone asks me for advice about buying a printer, my first question is usually, what size of print do you want to make? It is surprising how little thought many people have given to this matter, but it is a very important consideration.

Perhaps the first, but rather obvious point to remember is that while a larger format printer such as an A3+ or A2 model can be used to make smaller prints, an A4 printer cannot be magically scaled up to make A3 prints. As well as weighing up the pros and cons of each printer size, the key to making a decision is to work out what size the majority of the prints that you want to make are likely to be. If you wish to fill albums and mantel-shelf-sized picture frames with 6x4in and 5x7in prints and make the occasional A4 print, there is little point in buying an A3 printer.

The high pixel counts of modern DSLRs lend themselves to making larger prints and manufacturers like Canon and Epson are gearing themselves up for increased sales of A2 and large-format printers. If your aim is to produce lots of prints to display in an exhibition or for sale, A2 prints have much greater presence on the wall than A3 prints. They make a bolder statement and, for some people, indicate a higher level of work. It's worth bearing in mind that the framing

costs are also much higher, though.

There are comparatively few dedicated A4 printers available these days, as the majority are part of a multi-functional unit that can also scan documents and in some cases send faxes. In the past, the printers and scanner units built into a multifunctional or all-in-one device tended to be second rate, with older components being used while the current technology was reserved for dedicated units. Thankfully, this is no longer the case, but it is important to distinguish an all-in-one that is meant for office use from one that is aimed at more demanding photographers. The buyers' guide on pages 45–47 looks at A3 and A2 models, and we will focus on A4 and multifunctional printers at a later date.

## INKS

Many general-purpose printers use a limited number of inks, and sometimes there may be just four, comprising black, cyan, magenta and yellow. The inks may also be contained in just two cartridges, one for black ink and the other for the coloured inks. This approach can be extremely wasteful as the coloured ink cartridge has to be replaced as soon as any one of the three colours becomes depleted. Separate ink tanks are a far better option for photographers as they allow the cartridges that still contain some ink to remain in place while only the depleted one is replaced.

Adding extra ink colours to the basic set, for example light magenta, light cyan, red, green or orange, extends the colour gamut that the printer can produce. This means that colours are better replicated and gradations are smoother.

Printing monochrome images is tricky when coloured inks are used, as it is difficult to get a completely neutral mix throughout the tonal range. Printing with just the black ink, however, often takes much longer and the tonal range can be somewhat limited. Manufacturers can improve this performance by including light black (or more dilute black) in the inkset. This makes it much easier for the printer to reproduce the lighter tones in an image without speckling or banding becoming an issue.

For a while there was a burgeoning business in supplying monochrome inksets. These are banks of cartridges made by third-party suppliers that contain a range of inks with different intensities of black and they are used in place of the manufacturers' intended coloured and black inks. They vastly improved the monochrome performance of printers with just one black ink. However, once manufacturers began to produce printers with more than one black ink cartridge the need for these specialist sets diminished.

As a rule, the best prints are produced by printers that use a greater number of inks.

## PIGMENT VS DYE

Whereas soluble dye gives dye-based inks their colour, pigment-based inks contain finely ground solid colour in suspension. This means that while dye can soak into the print

medium, pigment is left on the surface.

A few years ago the results produced by a printer that used pigment-based inks were much easier to distinguish from those made by a printer using dye inks, but today they are a closer match. Traditionally, dye-based printers produce much more vibrant results, but advances in pigment-ink technology and additional colours in the inkset now enable pigment-ink printers to match them. Metameric failure, which sees prints appear to change colour in different lighting conditions, also used to be more of an issue with pigment inks than it is now.

A key benefit of pigment ink is that it has a very long life, so the prints resist fading for a long time. However, advances in dye technology have given dye-based prints much greater fade resistance.



## AP buyers' guide...

# A2 printers

Inkjet print quality has never been better, so use our guide to find your perfect A3 or A2 printer

## EPSON STYLUS PHOTO PRO 3880 £973

**EPSON'S** Stylus Photo Pro 3880 is the big brother of the Stylus Photo R2880 (see page 47) and can make prints of up to A2+ or 17x37.4in in size. It uses the same UltraChrome K3+ inkset as its smaller compatriot, but all nine inks can be accommodated at the same time and they each contain 80ml of liquid rather than the 11.4ml found in the R2880's tanks.

As well as doing away with the need to swap the matte black and photo black cartridges, economy of scale means that comparably sized prints costs considerably less than they would if they were made using the A3+ printer. Nevertheless, shelling out for cartridges that cost an average of £47 each isn't to be taken lightly.

Although it uses the same inkset as the R2880, there are a few differences with the 3880. Its

minimum droplet size, for example, is a little larger at 3.5pl and the maximum printing resolution is lower at 2880x1440dpi. We found the drop in resolution is just noticeable, but given that the 3880 is likely to be used to make larger prints that usually demand a greater viewing distance, in practice it is unlikely to be much of an issue.

Unlike many of Epson's high-end printers, the 3880 cannot accept rolls of paper, only sheets

In comparison to the Canon imagePROGRAF iPF5100 (see below), the Stylus Photo Pro 3880 is quite trim, but it still takes up 550x684x1040mm when the paper feed and receiver are ready for action.

With a printing time of around 11 minutes for an A2 print, the 3880 doesn't keep you hanging around too long. That's around a minute faster than the iPF5100 takes.

Website: [www.epson.co.uk](http://www.epson.co.uk)

## CANON IMAGEPROGRAF IPF5100 £1,649

**CANON'S** imagePROGRAF iPF5100 is an A2 printer, but it can print onto rolls of paper that are up to 17in wide and prints can be considerably longer than A2. In fact, their length is really only constrained by the limits of file handling. A cutter is built in so the paper can be trimmed to the ideal length for the print. These factors make the iPF5100 a great choice for photographers who want to produce large panoramas.

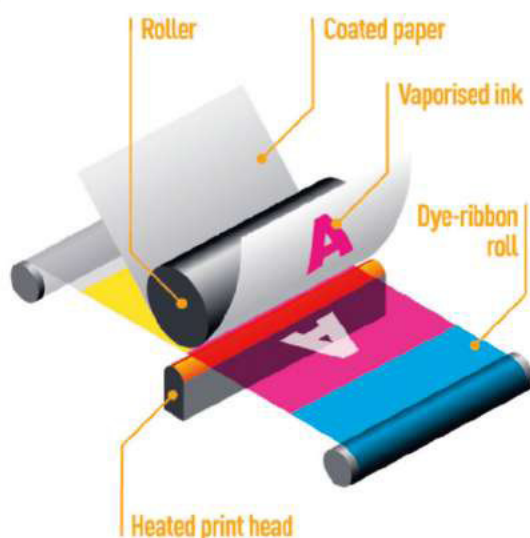
This printer uses 12 inks, the largest number of inks of any printer here, comprising cyan, magenta, yellow, photo cyan, photo magenta, red, green, blue, black, matte black, grey and photo grey. All the cartridges, which contain 130ml of ink, are used in the printer at the same time, so there's no swapping of tanks depending upon the print media. At £65 each, which means each litre of ink costs £500, buying a complete set of inks isn't for the faint-hearted.

Those who like to keep careful records or who want to charge for prints will love the fact that the iPF5100 measures the amount of ink that it uses for each print, and that this information can be retrieved to enable print costs to be calculated. I found that an A2 print uses 3.4ml of ink, which costs £1.70.

Although the colour and monochrome results from the iPF5100 are excellent, it is worth noting that its two print heads deliver a print resolution of 2,400x1,200dpi at a constant droplet size of 4pl. This is a lower resolution and larger droplet size than the Epson 3880 uses.

The main problem with the iPF5100 is its sheer bulk. It is 132cm (4ft 4in) wide, which is roughly twice the width of the paper it accepts. There is an optional stand available, and printing from a roll removes the need for a paper feed-tray, but you still have to find room space for it.

Website: [www.canon.co.uk](http://www.canon.co.uk)



## DYE-SUBLIMATION PRINTERS

Unlike inkjet printers that use liquid ink, dye-sublimation (or dye-sub) printers are loaded with solid ink on a ribbon or gel. The solid ink is heated so that it sublimates, or vaporises without going through a liquid phase, and is transported onto the paper. The colour is laid down in three passes, one each for cyan, magenta and yellow. There is often a fourth pass during which a protective layer is laid onto the print, increasing its resistance to water and scratching.

A key advantage to dye-sub printers is that the ink ribbons contain enough ink for a known number of prints, so you should never run out unexpectedly.



AP buyers' guide...

# A3 printers



## CANON PIXMA PRO 9000 MARK II £359

**THE PIXMA** Pro 9000 Mark II uses eight ChromaLife 100 dye-based inks, comprising cyan, magenta, yellow, photo cyan, photo magenta, red, green and black, each in a separate cartridge. With just one

black ink, this printer is a better option for colour rather than monochrome prints. The results on glossy media are especially impressive.

As the FINE print head produces droplets with a minimum volume of 2pl at a resolution of 4800x2400dpi, prints have plenty of detail. This and the 48-bit printing also ensure that gradations are nice and smooth.

Print size may be varied from 10x15cm up to A3+ and 35.56cm (14in) wide, with gloss, matte, canvas and board media being supported. Although a plug-in enables Canon DSLR users to print raw files direct from Adobe Photoshop, they also have the option print direct from the Digital Photo Pro (DPP) software supplied with their camera.

Printing times vary depending upon whether a colour or monochrome print is being made, but range from around 3 minutes 15 seconds for a colour A3 print, and about 16 minutes 15 seconds for monochrome.

Website [www.canon.co.uk](http://www.canon.co.uk)





## EPSON STYLUS PHOTO R2880 £598.99

**THE STYLUS** Photo R2880 is Epson's top-of-the range A3 printer for photographers. It uses Epson's UltraChrome K3+ inkset with nine cartridges containing photo black or matte black, light black, light light black, cyan, vivid magenta, yellow, light cyan, light magenta. The drawback is that the R2880 only has eight ink channels, so the photo black and matte black must be swapped around depending upon the print media. The pay-off, however, is that the printer can produce excellent colour and monochrome images on a range of different paper types.

With a minimum droplet size of 3pl, the R2880 cannot produce droplets as fine as the R1900 (below) or 1400 (bottom), but it still does an excellent job with gradations and fine details, and prints at a maximum resolution of 5760x134dpi. An A3+ print takes just over 10 minutes.

Using three shades of black (or grey) means the R2880 produces excellent black & white prints. The ability to shift an image's white point to very light grey can be useful with images that have large sections of very light tone, but it is at the expense of pure white, which may seem anathema to some.

Website: [www.epson.co.uk](http://www.epson.co.uk)

## EPSON STYLUS PHOTO R1900 £349.99

**AN EXTRA** £50 on top of the price of the Stylus Photo 1400 (below) brings a switch to Epson's UltraChrome Hi-Gloss 2 pigment-based inkset. In addition to the standard array of cyan, magenta and yellow inks, the R1900 uses red, orange, photo black and matte black ink, with an eighth tank being used for a gloss optimiser. The latter gives prints made on glossy paper an even lustre even where no ink has been laid down.

Like the 1400, the Stylus Photo R1900 has a minimum droplet size of 1.5pl, but there are 1,440 nozzles

on the Micro-Piezo print head, giving 180 per colour. The minimum droplet size is especially impressive given that the R1900 uses pigment inks, which tend to require larger nozzles that mean bigger droplets.

Despite using pigment-based inks, the R1900 produces vibrant prints with plenty of detail. Mono prints don't appear unduly hampered by the presence of just one black ink for each media and are very respectable.

With the highest quality settings selected, an A3 print takes around 9 minutes to emerge from the R1900.

Website: [www.epson.co.uk](http://www.epson.co.uk)

## CANON PIXMA PRO 9500 MARK II £539

**ALTHOUGH** it is outwardly almost identical to the Pixma Pro 9000 Mark II, the Pixma Pro 9500 Mark II uses Canon's Lucia pigment-based inkset. It has ten inks in individual cartridges and has grey and photo black in addition to cyan, magenta, yellow, photo cyan, photo magenta, red, green and black. The grey and photo black inks improve the Pixma Pro 9500 Mark II's monochrome performance, extending the range of tones that it can reproduce in its greyscale mode. However, we found that the blacks in prints made on matte paper tend to be dark charcoal-grey rather than absolute black.

The nozzles of printers using pigment ink tend to be larger, so it's no

surprise that the minimum droplet size delivered by the FINE print head of the Pixma Pro 9500 Mark II is 3pl rather than the 2pl of the Pixma Pro 9000 Mark II. However, the 9500 Mark II has the same maximum resolution as the 9000 Mark II (4800x2400dpi) and the results have lots of detail.

Colour and black & white prints are produced in about the same length of time, with a best-quality A3 print taking around 8 minutes 15 seconds.

As with the 9000, Windows Vista users can also benefit from the Ambient Light Correction feature that automatically adjusts the colours so they appear correct in different lighting conditions.

Website: [www.canon.co.uk](http://www.canon.co.uk)

## EPSON STYLUS PHOTO 1400 £299.99

**PRINTERS** tend to have a longer shelf life than cameras, and although we first tested Epson's Stylus Photo 1400 in AP 21 April 2007, it is still a current model and represents good value for money.

It uses six dye-based Claria inks (black, cyan, magenta, light cyan, light magenta and yellow) in separate cartridges with 90 nozzles on the Micro-Piezo print head for each colour. At just 1.5pl, its minimum droplet size is the same as the Epson Stylus Photo R1900's. This combines with an impressive maximum printing resolution of 5750x1440dpi, which enables the 1400 to produce smooth gradations and reproducing fine details.

Epson claims that prints made on

its Ultra Glossy, Premium Glossy, Premium Semigloss and Archival Matte papers with its Claria inks should resist fading for up to 200 years when stored in an album.

Although the 1400 produces prints of excellent quality, they change significantly after a few hours' drying time. It's worth waiting to assess the fully cured results before making any adjustments to the image colour. Even after drying, mono prints tend to have some form of colour cast, so this is not the best printer for those wishing to make pure black & white prints.

You can expect to wait around 9 minutes for an A3-sized print to be ejected from the 1400, whether it is colour or monochrome.

Website: [www.epson.co.uk](http://www.epson.co.uk)

	EPSON STYLUS PHOTO PRO 3880	CANON IMAGEPROGRAF IPF5100	CANON PIXMA PRO 9000 MARK II	CANON PIXMA PRO 9500 MARK II	EPSON STYLUS PHOTO 1400	EPSON STYLUS PHOTO R1900	EPSON STYLUS PHOTO R2880
Type	9 pigment-based-ink inkjet	12 pigment-based-ink inkjet	8 dye-based-ink inkjet	10 pigment-based-ink inkjet	6 dye-based-ink inkjet	8 pigment-based-ink inkjet	9 pigment-based-ink inkjet
Max document size	A2+	17in-wide rolls	A3+	A3+	A3+	A3+	A3+
Tested in AP	13 February 2010	3 April 2010	27 June 2009	26 September 2009	21 April 2007	3 May 2008	26 July 2008 supplement



# AskAP

Let the AP team answer your photographic queries



## TOY CAMERAS

**Q** I've seen some stunning images shot on toy cameras, and I'd like to give it a go. I can't decide between a Holga and a Diana (I like the square frame), and I wonder whether there might be another option as these both seem very expensive for what they are. **Nicola Silver**

**A** The Holga and Diana are different cameras, with the main advantage of the Diana being its external flash sync socket, and the fact that it looks a bit more retro in its baby-blue colour. The Holga comes in a few different variations, and some of the features these have may take your fancy (mine has a multi-coloured flash). The image area seems a little smaller on the Diana, and while both cameras exhibit terrible image quality at the corners of the frame (in a good way), the drop-off from sharp in the middle to blurred at the edges seems quicker in the Diana. It's not a bad thing, just an observation. If it were me, I'd go for the Holga. That's

an image from my Holga above.

You're right that they are expensive these days, though, which is what happens when an item becomes cool. You used to be able to pick up a Holga for £15–£20 (the posh one with the glass lens, too), but now you'll pay up to £75. There are many alternative working classics out there – I recently picked up an Olympus Trip for £12.50 – but the plastic Holga and Diana give a very unique look: light leaks, blurry lens quality and the occasional overlapping frame all add to the charm. And you won't know what you've shot until you see the film. It's a complete antidote for this digital age. **Ian Farrell**

## OLD LENSES FOR DIGITAL

**Q** One of my cameras is an Olympus OM10 and I also have a Zuiko MC Auto 50mm f/1.8, E-Zuiko Auto T 135mm f/3.5, and a Bell and Howell 200mm f/4 lenses. Did Olympus ever make a digital back or body to take these lenses? I will still shoot film using these lenses, but digital imaging makes life so much easier. **Malcolm Smith**

**A** When Olympus developed a digital SLR, it launched a completely new system: the Four Thirds standard. This is based around a sensor half the size of

35mm film, with the idea being that it would be possible to make smaller camera bodies. To make this a reality, a new lens mount, smaller than the existing OM mount, was developed, which means your existing OM lenses will not fit on Olympus's digital bodies.

It's not all bad news, though. There are adapters that enable old OM lenses to be mounted on Four Thirds and Micro Four Thirds cameras, and not just those from Olympus. Panasonic has some excellent Micro Four Thirds cameras available. Olympus's own adapter will be available from your local camera shop, with cheaper versions on the internet. **Ian Farrell**

## ASK...

Be it about modern technology, vintage equipment, photographic science or help with technique, here at AP we have the team that can help you. Simply send your questions to:

apanswers@ipcmedia.com  
or by post to:  
**Ask AP, Amateur Photographer Magazine, IPC Media, Blue Fin Building, 110 Southwark Street, London SE1 0SU.**



## ELEMENTS AND RAW

**Q** Can I open raw files straight into Adobe Photoshop Elements 7 or 8? I thought I would be able to, but a friend tells me I will need Adobe Lightroom as well. I am using Nikon D60 and D300 cameras. **Paul Welch**

**A** Yes, Adobe Elements is capable of opening raw files from your Nikon cameras. Adobe Elements, Photoshop and Lightroom all use a plug-in called Adobe Camera Raw to open raw files, and you must have an up-to-date version of this to work with files from newer cameras. You can download it from the Adobe website (www.adobe.com) or via the applications' update commands. This could have been what your friend was referring to. **Ian Farrell**

## MINOLTA VS WINDOWS

**Q** I have a Minolta Dimage Scan Elite 5400 film scanner and a few weeks ago I bought a computer with the new Windows 7 operating system. When I installed the scanner software I found the computer did not recognise the Minolta hardware. I've downloaded the latest driver, but this doesn't help. It is beginning to look like my £500 scanner is nothing but scrap metal. Surely Windows 7 has been out for long enough to warrant an update? **David Clarke**

**A** I sympathise, David. I've kept an old Apple PowerBook G4 running Mac OS 10.3 in service for a similar reason: to talk to my Nikon CoolScan 5000, which is no longer supported under the latest version of the operating system.

## f/AQ

### Digital photography... without the computer

I get a surprising number of letters from photographers who have 'gone digital', yet do not own a computer. Many ask how they can store and view images, and even manipulate your shots.

The easiest way of storing images without a computer, and therefore freeing up card space for re-use, is to make use of a high-street printing facility of the kind

## Your questions answered

Manufacturers do not make any money from updating drivers, and old hardware like film scanners have limited appeal in this digital capture age. Developing new software takes considerable resources, too.

There are a couple of options for third-party scanning software that could help you. The first is VueScan from Ed Hamrick ([www.hamrick.com](http://www.hamrick.com)) and costs \$39.95 (around £26). Ed manages to get his software to work with all of them. All major operating systems are supported, as well as features like dust removal and grain reduction. The interface is a little clunky in places, but the results are good.

Alternatively, have a look at SilverFast ([www.silverfast.com](http://www.silverfast.com)). The pricing structure for SilverFast is much more complicated, but you will be able to get the basic SE version for €49 (around £40), which will support the Dimage Scan Elite 5400. **Ian Farrell**

### SUPERGLUE ON LENS

**Q** Is it possible to remove a spot of superglue from the coated front element of an expensive lens, and, if so, how do I do it? **Jon Faupel**

**A** I'm not quite sure how you ended up with superglue on the front element of your lens, Jon! Hot soapy water is what is usually recommended to unstuck fingers that have been glued together, but I'd be nervous about getting a lens wet – water on the inside is only going to make matters worse. Organic solvents will almost certainly loosen the blob of glue so it can be removed, but would also damage the plastic outer casing of the lens if it came into contact with it, and I imagine it would damage the optical coating on the front of the lens. This sounds like a job for a professional repair service. You don't mention which brand of lens this is, but you could try returning it to the manufacturer for servicing. Alternatively, give Fixation a call ([www.fixationuk.com](http://www.fixationuk.com), tel: 0207 582 3294). If they can't fix it, they will certainly be able to give you advice. **Ian Farrell**

you'd find in Boots or Snappy Snaps. They will be able to transfer files from a card to DVD or CD for you for a small charge. I'd recommend getting two copies of the disc produced, as there is a slim chance of optical discs degenerating over time or getting scratched. Alternatively, try your local library, which will offer free computer facilities. They may let you transfer images from memory card to another storage medium, like a memory stick or CD/DVD.

High-street photo labs can provide prints. Take your disc in and tell them which image you want. You can also print at home using an inkjet printer with built-in memory card slots or PictBridge technology. Just insert a memory card or connect a PictBridge-compatible camera.

Of course, printing is not the only way

of viewing digital images. Devices from companies like Seagate ([www.seagate.com](http://www.seagate.com)), Western Digital ([www.wdc.com](http://www.wdc.com)) and LaCie ([www.lacie.com](http://www.lacie.com)) connect to a TV and let you show images stored on memory card, memory stick and portable hard disk. Many DVD players also allow images to be shown straight from DVD or CD, meaning you can play the discs made at Snappy Snaps and so on as soon as you get home.

When it comes to image manipulation, you really only have one option: editing images in-camera. Many DSLRs and compacts offer this facility. Images already shot to card can be cropped, brightened and enhanced using a camera's editing facilities and then a new JPEG file saved. Some let you do this to raw files, too.

**Ian Farrell**

## FROM THE AP FORUM

### Portrait lens wanted

**Estelle asks** I would like to experiment with portrait work and creating narrow depth of field while maintaining sharp focus on the subject. Which lens would be best to start with? I have borrowed a Canon EF 28-80mm f/2.8 L USM, but this is too expensive to buy, and I've read reviews of the Canon EF 50mm f/1.8 II lens. Any thoughts, please?

**Startibarfast replies** I'm guessing you are using a DSLR with 1.6x crop factor, in which case the 'nifty fifty' 50mm lens is truly great for the money. If you get the 50mm it will always have a place in your kit bag.

**El Sid replies** You could consider the old Canon EF 50mm f/2.5 macro, the EF-S 60mm f/2.8 macro, one of the 100mm macros or the 85mm f/1.8, although these cost more than a new 50mm optic, even second-hand. It may be worth looking for a second-hand Sigma 28-70mm f/2.8, but they also hold their value.

**Dave S replies** One of the good things about the EOS mount is that you can use almost any other make of lens on it with an adapter. I bought a near-mint Contax EF 50mm f/1.7 Planar for less than a Canon EF 50mm f/1.8. Using these adapters could enable you to look at vintage lenses, for a unique 'feel' to your portraits. As a first stop, you could check out Ffordes ([www.fffordes.com](http://www.fffordes.com)) or Mr Cad ([www.mrcad.co.uk](http://www.mrcad.co.uk)) for lenses, and SRB-Griturn ([www.srb-griturn.com](http://www.srb-griturn.com)) for adapters.

[www.amateurphotographer.co.uk](http://www.amateurphotographer.co.uk)

# In next week's AP

On sale Tuesday 14 September

## HDR SPECIAL

Create HDR images with impact

### AP EXPLAINS...

© RICHARD SIBLEY



### HDR AND HOW TO GET IT RIGHT

It's all too easy to go too far with HDR, so **Richard Sibley** looks at how to create subtle and realistic images

### TECHNIQUE

### HDR WITH LAYERS

**Tim Coleman** explains how to achieve the HDR look using software and Layers

### DETAIL-RICH HDR

© AARON BENNETT



### MAXIMUM IMPACT

HDR enthusiast **Aaron Bennett** reveals his method of combining up to 30 images to get maximum detail

### WHAT TO BUY

### BUYERS' GUIDE

Our guide to the best software for HDR imagery



**Gitzo GT1541T Offer**  
 Gitzo's unique 180° folding mechanism accommodates the head inside the folded tripod legs & makes this the smallest folded tripod for its open size & number of sections. An excellent choice for compact digital cameras and DSLRs. Series 1 offers an excellent maximum load capacity with good torsional rigidity at a very low weight.  
 Purchase any Series 1 Traveler tripod and receive either a GC1201T case RRP £49.95, or a GC2240T backpack RRP £89.95 absolutely FREE! Ends 30/09/2010.  
 GT1541T Tripod **SAVE £61 £358.95**  
 GT1550T Tripod **SAVE £65 £414.95**  
 GK1581OT Tripod **SAVE £180 £720.00**

**Gitzo GK2580TQR Offer**  
 The new Series 2 Traveler tripod offers excellent maximum load capacity and great torsion rigidity thanks to G-Lock and the newly designed upper casting. Extremely lightweight and compact, this kit is the ultimate solution for photographers looking for a regular size tripod that combines light weight, compactness and transportability with no compromise on stability and image sharpness. It includes the new Traveler Series 2 head.  
 Purchase a GK2580TQR Traveler tripod & receive a GC3320 tripod holster RRP £29.95, & a GC5210 advanced tripod strap RRP £29.95 absolutely FREE! Ends 30/09/2010.  
 GK2580TQR Tripod **SAVE £149 £549.95**

**Manfrotto 808RC4 Offer**  
 There are two balance springs in the vertical tilt (forward/backward) & horizontal tilt (left/right) movements. These springs enable you to more comfortably handle heavier camera loads with minimal effort. Both springs can be turned off in case normal head operation is required. The head is comprised of aluminium and designed in a manner to support up to 8kg yet lightweight & small enough to pack in any camera kit. The standard quick release system is used to accommodate larger camera platforms which incorporate dual axis bubble levels to achieve level shots.  
 Claim £10 cash-back from Manfrotto until 30/09/2010. Price below before cash back.  
 808RC4 Head **SAVE £31 £99.00**

**Manfrotto 468MGR2 Offer**  
 The Hydrostatic 468MGR2 is their most advanced ball head. An inner oil chamber is compressed by turning the locking knob, exerting even pressure on the whole of the underside of the ball ensuring sturdier locking and higher capacity for camera and lens loads of up to 10kg. This head has a magnesium die cast body, a 2" Teflon coated aluminium ball which with specially designed tension surfaces provides movement as smooth as silk. A calibrated adjustable tension control allows you to preset the ball tension to suit your camera weight and give you fingertip control.  
 Claim £10 cash-back from Manfrotto until 30/09/2010. Price below before cash back.  
 468MGR2 Head **SAVE £85 £164.97**

**Manfrotto Cash-Back Offer**  
 Claim £10 cash-back from Manfrotto on all of the following heads until 30/09/2010. Price below is before cash back.  
 229 Head **SAVE £25 £139.95**  
 322RC2 Head **SAVE £15 £104.90**  
 324RC2 Head **SAVE £10 £99.00**  
 327RC2 Head **SAVE £11 £149.00**  
 468MGR4 Head **SAVE £62 £187.95**

**Manfrotto 804RC2 Offer**  
 A 3-way photo head constructed of durable and lightweight technical polymer. A unique spring feature has been added to the 804RC2 to assist in the tilt motion of the head to compensate for heavier, off center loads. Ergonomic & newly designed handles fit comfortably in the hands, while the quick release plate fits snugly in the low-profile receiver.  
 Claim £5 cash-back from Manfrotto until 30/09/2010. Price below before cash back.  
 804RC2 Head **SAVE £12 £52.95**

**Manfrotto 496RC2 Offer**  
 Strong enough to take DSLR cameras with medium lenses, and light medium format cameras. It has a single repositionable locking lever for 360° panoramic rotation and +/-90° tilt movements plus a friction control for soft & precise movement, with quick release function. Perfect for both amateurs and professionals.  
 Claim £5 cash-back from Manfrotto until 30/09/2010. Price below before cash back.  
 496RC2 Head **SAVE £5 £54.95**

**Manfrotto Cash-Back Offer**  
 Claim £5 cash-back from Manfrotto on all of the following heads until 30/09/2010. Price below is before cash back.  
 056 Head **SAVE £15 £19.97**  
 222 Head **SAVE £15 £74.95**  
 391RC2 Head **SAVE £15 £54.95**  
 460MG Head **SAVE £15 £64.95**  
 492 Head **SAVE £3 £29.95**  
 492LCD Head **SAVE £11 £39.00**  
 494 Head **SAVE £3 £39.95**  
 494RC2 Head **SAVE £5 £44.95**  
 496 Head **SAVE £5 £49.95**  
 498 Head **SAVE £10 £59.95**  
 498RC2 Head **SAVE £10 £79.95**

**Velbon GEO E530 Tripod**  
 Uses a unique Carbon-Fibre and Basalt composite material which gives the legs added strength and rigidity. Features Spiral-Elched surfaces for smooth, fast extension as well as unique Lever-Locking leg sections. Each leg is fitted with an adjustable tip, giving Rubber or Spike options. Also unique is the new centre column quick release lever which allows fast adjustment of column height. The two-section centre column can be split for low-angle use. Supplied with a leg pouchette, which can be used for comfortable shoulder carrying and as a store bag for added tripod support in windy conditions.  
 GEO E530 Tripod **£169.95**

**Trek-Tech Trekpod Go! Pro**  
 Packs into its included travel case and fits in a carry-on bag. It also telescopes 4' shorter than the TrekPod II in the monopod/hiking staff mode, has 'soft touch' rubber locking nuts, and features new MagMount PRO quick release ball head system. TrekPod Go! PRO includes one light force (silver) MagAdapter and one heavy force MagAdapter STAR with 3mm hex wrench, and free travel case.  
 Trekpod Go! Pro **SAVE £32 £108.90**  
 Also receive a table-top tripod, pan and tilt video head and a versatile clamping arm WORTH £80.

**Trek-Tech Trekpod XL**  
 The most versatile tool available for the active photographer. A monopod that triples as a tripod and a hiking staff, it enables you to get shots never before possible. Manufactured from lightweight, rugged carbon fiber it weighs only 600g with the ball head. Includes the innovative quick change MagMount PRO ball head. The Ball head supports 6 Kilo of camera gear, and includes the MagMount system for one hand mounting and demounting of your equipment.  
 Trekpod XL **SAVE £72 £217.95**

**NG Earth Explorer Medium**  
 Quick snap buckle allows easy access to your equipment. Roll-away, zipper-sealed flap provides quick snap buckle closure for easy access to your equipment. Designated padded internal and external zones that provide protection for up to a medium-size D/S/R, Mini DV camcorder and laptop. Includes modular, detachable bottom padding, which can be folded away when not necessary to reduce the bag's volume. Four external pockets and pouches for additional storage options. An additional rear concealed pocket for storage of documents, passport etc.  
 Earth Explorer Medium **SAVE £20 £79.95**  
 Earth Explorer Large **SAVE £17 £92.95**

**NG Walkabout Medium**  
 A removable padded insert holds and protects a DSLR camera or camcorder with media accessories. The halfway modular divider allows for your specific equipment setup. There is a padded compartment that holds most mini laptops and notebooks (9" or less). The zipper-sealed flap protects your gear from the elements. Two front organizer pockets with sleeves for cell phone, batteries, and other accessories.  
 Walkabout Medium **SAVE £30 £109.90**  
 Walkabout Midi **SAVE £22 £74.00**

**Tamrac Expedition 6X**  
 Medium size bag offering foam padded protection and quick access. The main compartment is completely foam padded with numerous adjustable, foam padded dividers to protect digital or film SLRs, 5-6 lenses, and a flash. The camera with a long zoom lens attached lies on 2 vertical, foam-padded dividers internally reinforced with rigid plastic. A restraint strap holds the lens firmly in place. Two Windowpane-Mesh™ pockets inside the front flap visibly organize filters, film & other accessories. A plastic, foam-padded platform in the bottom provides shock protection while a LockDown™ rain flap protects the zipper from the elements.  
 Expedition 6X **£89.95**  
 Expedition 4X **SAVE £60 £59.97**  
 Expedition 5X **£79.95**  
 Expedition 7X **£125.95**  
 Expedition 8X **£148.95**  
 Expedition 9X **SAVE £100 £159.97**

**Tamrac Evolution 8 NEW!**  
 Designed to be versatile and enable quick access to photo gear. It has a unique harness system, that means it can be carried in three different ways. It can be carried as a backpack, or a sling pack worn over the right shoulder or the left. With Tamrac's Triple Access System™, there are also three different ways to access photo equipment either through the front door or through two side doors. Great for a DSLR with grip and up to an 8 inch lens attached, plus additional lenses, and a flash.  
 Evolution 8 Backpack **SAVE £37 £118.00**  
 Evolution 6 Backpack **SAVE £36 £99.00**

**Tamrac Velocity 10X Sling**  
 Large enough to hold two bodies with lenses attached. Inside the main compartment, the camera with lens is suspended on 2 vertical, foam-padded dividers that are internally reinforced with rigid plastic. The bag can be carried comfortably like a backpack, but when swung around to the front, the secure zippered Quick Flip Top opens away from the body for fast and convenient access to camera gear.  
 Velocity 10X **SAVE £4 £56.95**  
 Velocity 5X Hip Pack **SAVE £19 £36.95**  
 Velocity 6X **SAVE £8 £24.95**  
 Velocity 7X **SAVE £1 £37.95**  
 Velocity 8X **SAVE £3 £40.95**  
 Velocity 9X **SAVE £7 £42.00**

**Tamrac Explorer 400**  
 Designed to hold and protect a DSLR with a 5" (12.7cm) lens attached, an additional lens or two plus a flash. Accessories can be held in the front and side pocket. It is also supplied with a removable rain cover incase you get caught out in bad weather. There is an EasyGrip™ carrying handle and BioCurve™ shoulder strap to make transporting your camera easy.  
 Explorer 400 **£39.90**  
 Explorer 100 **SAVE £22 £32.90**  
 Explorer 200 **SAVE £22 £37.90**

**Tamrac Memory Wallet 8**  
 Ideal for organising all your memory and power, this wallet has pockets to provide quick access to memory cards and batteries. There are red tags to identify which memory cards and batteries are used up and which are still available so you can switch cards and batteries on the move.  
 Memory Wallet 8 **£9.95**  
 Memory Wallet 4 **£7.45** Memory Wallet 2 **£6.95**

**Tamrac Lens Cases**  
 Zip-closing, foam-padded lens cases with weather flap. There is a size designed to fit most popular lens types.  
 Pro 100 **£12.72** Medium **£9.95**  
 Pro 50 **£13.69** Extra Large **£14.00**  
 Pro 200 **£15.61**

**Ricoh GX200 Viewfinder Kit**  
 24 mm wide-angle optical 3x zoom, 12MP CCD. Vibration correction function. 1cm macro. High-sensitivity ISO 1600. 2.7 inch 460,000 dots LCD. Long battery life - up to 350 shots. RAW capture. This camera is able to produce high quality images from edge to edge with low noise and natural gradation.  
 Ricoh GX200 + VF + 4Gb **£324.00**  
 HA-2 Hood and Adapter **£37.95**  
 DW-6 0.79x Conversion Lens **£103.95**  
 LC-1 Self Retaining Lens Cap **£22.95**  
 SC-45 Soft Leather Case **£24.95**  
 DB-60 Spare Battery **£32.95**  
 Delkin SD Pro 8Gb card **£29.95**

**Tamron 18-270mm VC**  
 The Tamron 18-270mm lens covers an angle of view equivalent to a 28mm wideangle to a 419mm ultra telephoto with just one lens, letting you capture once-in-a-lifetime images of panoramic landscape images or close-up pictures, without having to get too close to the subject and without having to change lenses. We stock a large range of Tamron lenses (not all fits stocked), prices quoted are for CAF/NAF, others may vary. All are U.K. sourced stock.  
 10-24 3.5/4.5 DiII **£378.90** 28-300 Di **£292.95**  
 17-50 2.8 DiII VC **£399.99** 28-300 Di VC **£499.00**  
 18-200 F3.5/6.3 DiII **£168.95** 60 f2 macro **£389.00**  
 18-250 F3.5/6.3 DiII **£299.90** 70-200 f2.8 Di **£469.00**  
 18-250 while stocks last 70-300 Di **£129.95**  
 18-270 DiII VC **£418.90** 90 f2.8 macro **£337.95**  
 28-75 f2.8 Di **£356.90** 200-500 Di **£829.95**

**Hoya HD Digital Filters**  
 Top of the range filters designed to get the best from today's digital cameras.  

Size	Protector	UV	Circul Pol
52mm	£26.95	£27.95	£57.97
55mm	£28.95	£29.95	£64.97
58mm	£32.95	£31.95	£66.95
62mm	£36.95	£35.95	£73.97
67mm	£40.95	£41.95	£86.95
72mm	£46.95	£45.97	£102.97
77mm	£52.95	£57.95	£129.95
82mm	£60.95	£68.95	£159.95

**Hoya UV-Circular Polariser**  
 A revolutionary hybrid design combining the effect of two different filters in one ring. This UV filter eliminates ultraviolet rays to remove haze from outdoor shots and the circular polarizer removes reflections and increases color saturation, without affecting the overall color balance. Fitted in a slim rotating 5mm ring, it will be invaluable to landscape and other photographers who need to avoid vignetting with wide angle lenses.  

49mm	£28.99	62mm	£36.99
52mm	£30.99	72mm	£44.99
55mm	£31.99	77mm	£49.99
58mm	£33.99	82mm	£69.99

**Cokin 'Z' & 'P' Graduated Filters**  
 Complete range of Cokin filters, including graduated blue and graduated grey filters always in stock, as is the graduated fluorescent pink filter.  
 Graduated Grey (Z121 series) ea **£48.95**  
 Graduated Blue (Z122/3) ea **£41.95**  
 Graduated Tobacco (Z124/5) ea **£43.95**  
 Graduated Grey (P121 series) ea **£15.95**  
 'Z' Filter Holder BZ100 **£42.95**  
 'Z' Adapter Rings from **£16.95**

**Blue Crane Training DVDs**  
 In order to master your camera all you need are these training DVDs and about two hours. You will gain the confidence and knowledge to create the images you desire. All topics are arranged in chapters, so you can move at your own pace and easily go back to revise sections. Versions available for most popular makes and models of DSLR - ring or see web for titles.  
 Blue Crane Training DVD **£22.99**

**Delkin Universal Charger**  
 This little uni charger allows you to charge ANY TWO digital camera batteries at the same time. That's right, charge your BP-511 DSLR battery while your point and shoot battery charges on the same charger at the same time, or charge your flash unit's AA's while your camera battery charges on the other side - all on one device! With interchangeable battery-specific charging plates, the charging possibilities are endless. World travel friendly with 1.13/2.20V automatic switching, and a car charger for on-the-go power.  
 Universal Charger **£28.95**  
 Charging Plates (See web for available fits) each **£2.99**

**Delkin Fat Gecko Mount**  
 The Fat Gecko suction cup mount allows users to secure cameras to motorcycles, cars, trucks, airplanes, or any other smooth surface. The blend of rugged design and ease of use makes Delkin's Fat Gecko camera mount optimal for use in all action photography applications. So strong it can hold an eight pound camera and the double knuckle design and 2" extension tube allow for 360° tilt, 360° turn & 360° rotation.  
 Fat Gecko **£54.90**  
 Fat Gecko Mini **SAVE £5 £24.85**  
 Fat Gecko Bike **SAVE £13 £36.95**

**Delkin Memory Cards**  
 Secure Digital PRO Cards are designed to be fast and durable for extensive shooting in the most extreme conditions. These Pro cards are optimized for use in professional grade digital compact cameras, SLRs and camcorders. SDHC Pro Class 10 16Gb memory cards are capable of transfer speeds up to 24MB/s.  
 SD Pro 4Gb **£17.95** SD Pro 16Gb **£52.95**  
 SD Pro 8Gb **£29.95** SD Pro 32Gb **£99.95**

**Delkin Camera Batteries**  
 Delkins range of replacement camera batteries are available for a wide range of makes and models. We stock most of the popular varieties and list below just a few of these - please enquire if your battery is not listed.  
 Canon NB-2LH **£12.95** Nikon EN-EL9 **£15.95**  
 Canon NB-7L **£9.95** Nikon EN-EL3E **£18.95**  
 Canon NP-E3 **£32.95** Nikon EN-EL8 **£9.95**  
 Canon BP-511 **£14.95** Nikon EN-EL5 **£14.95**

**Slik Sprint Pro II GM Tripod**  
 This tripod makes setting up simple and secure with fast, easy to use SLIK speed release leg locks, gearless center column for quick height adjustments, and 3 position adjustable angle legs for easy set up on uneven ground or steps.  
 Sprint Pro II GM **SAVE £31 £62.95**

**Slik Sprint Mini II GM Tripod**  
 Makes setting up simple and secure with fast, easy to use SLIK speed release leg locks and gearless center column for quick height adjustments. Weighs just 26 ounces & folds to an impressively compact 14.1". Surprising for tripod of this small size, it has a maximum height of 43.3".  
 Sprint Mini II GM **SAVE £32 £54.95**



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 All prices subject to stock availability. E&OE.



# SPI SCHOOL OF PHOTOGRAPHIC IMAGING

## STAR STUDENT

### Michael Brewis

#### ENROLLED ON:

Diploma in Digital Photography

AGE: 46

#### EQUIPMENT:

Olympus E-620  
DSLR; 14-42mm  
and 40-150mm  
lenses; Manfrotto  
718B tripod



## Student introduction

#### When did you first become interested in photography?

Having been born and bred in the fantastically photogenic county of Northumberland, I think it was inevitable that I would want to take photographs. I've had an interest in photography since finding out about the influence early photographers had on Impressionist artists during my A-level art exams in the dim and distant 1980s.

This led to me buying a Zenith SLR soon after school and embarking on a photography evening course. The Zenith was very heavy, but I learned a lot. I then progressed to an Olympus OM20 and spent many magical hours out and about taking photographs of Northumberland during the early 1980s. Then, the gift of a small digital compact camera three or four years ago rekindled my interest in photography.

#### What do you enjoy most about photography?

To me, photography is a great way of relaxing, particularly now that I am always looking for that special location or the best time of day for the lighting. Although I have had some of my images displayed in magazines, I do not aspire to become professional in any way. I just want to become better at a hobby I really enjoy.

#### Why did you decide to enrol on the SPI Diploma in Digital Photography course?

I enrolled on the Diploma course to gain a better understanding of the technical aspects of my own camera and its capabilities, so I can get the shots I want direct from the camera rather than tinkering with them at a later stage on my computer. The feedback I received from the first module was really helpful and has already challenged the way I feel about my shots to date and how I want to approach them in the future.

#### What is your proudest moment in photography?

To date, my proudest moment in photography is having a full-page image displayed in *North East Life* magazine. However, my main delight is having family or friends ask for a print of one of my photographs.

#### Where is your favourite location to take photographs?

Being a true Northumbrian, I consider myself very lucky to live on the doorstep of a fantastic coast, with wonderful castles, lots of history and limitless landscapes. My favourite location, though, is the coastal area around Cresswell and nearby Druridge Bay in Northumberland. The scenery is breathtaking and it's always virtually deserted – but don't tell everyone about this beautiful secret!



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## Summing up

**WE SAY:** Michael's images are not bad at all, but we think he should try to put more effort into photographing his subjects in the best possible light first time round and then doing just minor adjustments on the computer. While it is true that a great image can be improved, a bad one cannot. Sometimes you can get away with more drastic modifications, and portraiture is an area where more aggressive editing can be successful as it is easier to stray from reality with such shots. Landscapes, however, should be recorded as accurately as possible, otherwise we might as well turn up with a paintbrush and canvas rather than a camera. If Michael can apply this philosophy to most of his landscapes (only deviating when he feels there is a good reason to do so), then we feel his work would be much improved. His self-assessment was also good, with a nice mixture of positive and negative comments about his own work.

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# Me & my camera

AP reader **Peter Moore** explains how his love of infrared was rekindled when he had his Nikon D300 converted

**WHILE** on a trip to Colorado and Utah in the USA during 2007, I began experimenting with infrared photography on my Nikon D70. I had heard that the D70 had a good response to infrared, so I made a number of images by placing a Hoya R72 720nm filter over my lenses. Exposure times exceeded 20secs and had a red bias, but after conversion to black & white and with a bit of editing I produced some good images. This rekindled my dormant love of infrared photography, which had begun long ago when I used to shoot on 35mm film. I knew that I wanted to take more infrared images of a wide range of subjects, but with my darkroom gone long ago, and with digital exposures exceeding 20secs, I had to find a better solution.

I searched the internet and found some companies that offered to convert a camera to see in infrared only. I decided that this was for me, so two years ago I took the plunge and had my Nikon D70 converted

by Life Pixel ([www.lifepixel.com](http://www.lifepixel.com)). I was very happy with the results from the camera and have a number of great prints to show for it. However, with the advances made over time in DSLR bodies, and my desire for bigger prints and an enhanced shooting experience, I decided to move up to a Nikon D300. This time the camera was converted to infrared by Protech Photographic ([www.protechrepairs.co.uk](http://www.protechrepairs.co.uk)). The D300 was an ideal choice for my second conversion as it combines a higher performance along with a relatively compact and lightweight body that is highly portable for landscape work. It also packs a few extra tricks that are just great for infrared photography. Be aware, though, that this conversion may disable the mechanism for self-cleaning the sensor.

Through my internet research I had learned that most manufacturers go to great lengths to stop infrared light from reaching the camera's sensor, as it can interfere with



the autofocus and exposure systems. Most modern DSLRs are factory-fitted with an infrared blocking filter in front of the sensor and behind the mirror to suppress the infrared light and optimise image-capture performance, hence the 20sec-plus exposures I had been getting with the D70.

The conversion removes the infrared blocking filter and replaces it with one that passes infrared light, while blocking all or most of the visible light spectrum. For the D300 conversion, I chose an R72 720nm filter because it gives a true infrared effect with a slight amount of false colour, which provides some options

**Woolpacks,  
Peak District**  
18–35mm,  
1/60sec at f/11





for channel swapping effects via Photoshop. A stronger 87C 830nm filter can be fitted to give a true black & white effect straight out of the camera.

My converted D300 is now dedicated to infrared, but I can operate it much like a normal camera because the new filter is behind the mirror. Amazingly, there is so much infrared radiation that sensitivity is not impacted and I regularly make handheld exposures with a normal range of shutter speeds. Composition and focusing can be achieved as normal through the viewfinder. For DSLR conversions, some companies will recalibrate the focus to a user-defined AF lens, while others say this is unnecessary in landscape photography with wideangle lenses and small apertures.

When my converted D300 first arrived, I discovered that images made with the auto white balance setting were quite red. I overcame this by making a custom white balance. I shot around midday on a sunny

**Right: Jephson Memorial, Leamington Spa, Warwickshire**  
18-35mm,  
1/180sec at f/11,  
ISO 400, +1.7EV compensation

**Below: Erratic rock and trees, Lake District**  
18-35mm,  
1/8sec at f/11



day with the sun behind the camera. I filled the frame with a patch of sunlit grass (which is white in infrared) and made a manual custom white balance exposure. With this white balance, grass and foliage come out white, and blue skies often have a deep brown tint, which is quite attractive if you like toned and tinted work. During image editing most of my pictures are converted to black & white, so I leave the camera white balance at this setting for speed and convenience. Some infrared photographers prefer to reset the white balance for every new scene taken.

### LENSES FOR INFRARED

To complement the D300 there is a superb range of modern and older second-hand Nikon and third-party optics available, many of which perform beautifully in infrared. Some lenses create a central hot spot, which, if present, is always more noticeable at the smaller apertures and ruins an otherwise good picture. I tested all my existing lenses on infrared and have had great results with the Nikkor AF-S 18-55mm f/3.5-5.6 ED G Mark II, AF-D 18-35mm ED f/3.5-4, AF-D 24-85mm f/2.8-4 and AF-S 70-300mm f/4.5-5.6G IF-ED VR. If I were buying a lens for infrared use, I would always test it at the shop first. I take great care to shade the lens effectively, as some lenses are more susceptible to flare in infrared radiation than in visible light. For shooting infrared on longer telephoto lenses I recommend apochromatic (APO) lenses as the best choice because they are corrected for the near-infrared spectrum.

When shooting infrared on film, I used to focus through the viewfinder, then adjust the focused distance to match a red dot or other infrared index mark on the lens, place an infrared filter over the lens and make the exposure. The D300, however, supports Live View. I simply compose as normal through the viewfinder, lock up the ball head on the



**Scafell range, Lake District**  
18-35mm, 1/20sec at f/13,  
+1.7EV compensation





attached tripod, switch to Live View mode, zoom in and adjust focus manually on a selected subject in the frame. This eliminates focusing issues even with longer telephotos. I usually choose an aperture of around f/8 or f/11 to ensure adequate depth of field.

### MEASURING EXPOSURE

The usual adage is 'expose to the right', which applies as much to infrared as it does to digital colour photography. My aim is to expose so that the histogram is as close as possible to the right side without making the highlights indicator flash or causing a spike at the 255 brightness value. Overexposed images result in burned-out highlights, which no amount of editing will fully repair. So, for optimum results, I turn on image review in the camera and check images on the monitor for correct and full exposure. With the D300, I review all three RGB histograms to check that none has overexposed spikes on the right.

Taken on infrared, an outdoor scene with lots of grass and foliage meters much like a snow scene in normal photography. It follows that a positive exposure compensation is required to avoid underexposure. The amount of compensation will vary from scene to scene, but with the R72 filter I have found that +0.5EV to +2EV of compensation is usually enough.

With the D300, my favoured settings for handheld working are matrix metering in aperture-priority mode, +1.5EV exposure compensation and auto bracketing set for three frames in 1EV steps, with advance mode set to continuous high. One prolonged press of the shutter release then captures three exposures in rapid succession. I review the exposure of each image immediately on the LCD monitor by checking the histograms, and reshoot if necessary. When working more methodically with a tripod, I always shoot in manual exposure mode



**Kenilworth Castle, Warwickshire**  
18-35mm, 1/90sec  
at f/13, ISO 200



**Leicester's Gatehouse, Kenilworth Castle, Warwickshire**  
18-35mm, three separate exposures combined at 1EV intervals

with meter steps set to 0.3EV. I spot-meter on a highlight such as the grass and set a combination of aperture and shutter speed that meters around +1.7EV. I then shoot and review the histogram and modify the shutter speed (not the aperture) until I am happy with the resulting capture.

### PERFECTING THE IMAGE

I have noticed that many correctly exposed images appear flat and devoid of true blacks and whites when viewed later on the computer screen. However, the solution to this is easy. In my Nikon Capture NX2 editing program, I go into Levels and set the blacks by moving the black slider to the right so that it just touches the left-hand end of the histogram. I then move the white slider left to touch the right end of the histogram to set the whites. If the picture still looks a little weak in the midtones, I drag the middle/grey slider to the right to increase midtone contrast and density. I am then ready for localised edits and the rest of my digital workflow as normal. To accommodate the brightness range found in very contrasty scenes, I use the HDR technique to combine a sequence of exposures made in 1EV steps.

Digital infrared images differ from film images insofar as they have no grain as such and the impressionistic highlights are not present. It is possible to use image-editing suites to re-introduce these effects to emulate the character of infrared film, but I simply go with the new look. I have found that I can make interesting infrared images almost anywhere and at any time of the year. Infrared photography has become a fabulous addition to my repertoire and helps me to stay active throughout the year. **AP**

## INFRARED 100

It is now 100 years since Professor Robert Wood made the first infrared photographs and to celebrate this event the RPS is holding two one-day seminars on 7 and 8 October. The first will be on the development and general applications of infrared imaging, and the second on infrared imaging in astronomy. The courses, which cost from £25-£65, will be held at the Royal Astronomical Society, Burlington House, Piccadilly, London W1J 0BQ. Visit [www.rps-isg.org/IR100.php](http://www.rps-isg.org/IR100.php) for details.

The Royal Photographic Society is also holding a small international exhibition of infrared photographs and thermograms from 1-28 October at Fenton House, 122 Wells Road, Bath BA2 3AH. Visit [www.rps.org/events](http://www.rps.org/events) for details.



To see more of **Peter Moore's** work and for details of his lectures, visit **[www.petermoorephotography.net](http://www.petermoorephotography.net)**



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The result is the TrekPod, a lightweight, height-adjustable walking/hiking staff, with a fully integrated tripod, and a magnetic quick-release ball head system called the MagMount.

The unique MagMount quick release system incorporates a Neodymium "super magnet" as the initial connection between the ball head and a steel quick-release plate, called a MagAdapter. That screws into the bottom of your camera. A safety clip that stores below the ball head securely locks your device to the MagMount ball head. Each MagMount ball head is supplied with two MagAdapter quick release plates.

**TrekPod II - £69.95**

A refined version of the original TrekPod, using aircraft-grade aluminium alloy, it comes complete with a MagMount STAR ball head, weighs 765g, and is capable of supporting a camera system weighing up to 4kg. Maximum height in tripod mode of 145cm, and a maximum height in monopod mode of 158cm. The TrekPod II collapses down to 80cm.

**TrekPod GO PRO - £129.95**

The TrekPod GO PRO is a more compact TrekPod, collapsing down to just 56cm, yet still expanding to the same maximum height as the TrekPod II. Supplied with a travel case, it is small enough to qualify as aircraft hand luggage. Weighing 784g including the MagMount PRO ball head that comes as part of the package, it is able to support 4kg.

**TrekPod XL - £246.95**

The TrekPod XL is the top of the range TrekPod, utilizing Carbon Fibre tubes, this is the lightest TrekPod ever, weighing in at just 480g, yet retaining the same dimensions as the TrekPod GO PRO. It includes the larger MagMount PRO ball head.

**TrekTech OPTERA**

**Trek Tech Optera 460** **£39.95**

The Trek Tech Optera 460 is the next generation of portable tripods - capable of holding 5kg.

The flexible legs are padded, covered in a soft yet hard-wearing water resistant fabric, and have integrated rubber feet for extra grip. They can be bent in practically any direction, allowing you to mount your camera almost anywhere! The D-ring cord system attaches to the legs, ensuring that they will not slip out. A camera is attached using Trek-Tech's clever magnetic quick release system, and two MagAdapter quick release plates are supplied.

The Optera 460 PRO has an extra long 460mm leg to support up to a 400mm zoom lens. Uniquely, it can also be wrapped around your camera for protection while being carried.

**Trek Tech Optera 230**  
A smaller version of the above, with 230mm long legs **£37.95**

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The original MagMount ball head. Weighing in at just 73g, it is capable of holding 4kg. **£25.95**

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**MagMount PRO**  
Utilising the same Square Tooth Anti-Rotation system as the MagMount STAR, the MagMount PRO is a larger ball head, weighing 177g, and capable of holding an impressive 6kg. **£59.95**

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**THERE** must be few photographers nowadays who have not used a zoom lens. Such an optic is defined as one whose focal length can be varied, but which remains in focus as it is changing. The alternative is the 'varifocal' lens, which requires refocusing as the focal length changes.

In the first two parts of this series (AP 10 July and AP 21 August), we saw how the Victorian and Edwardian days – when, say, a 5in lens was just that – were ended by the arrival of the 35mm camera. At first there were only coupled rangefinder models available, with no flipping reflex mirror to accommodate between the lens and film, so only the very short focal lengths of wideangle lenses needed special design. Then in the 1960s came the Japanese with their SLRs and lenses. The reflex mirror was now in the way and short focal-length lenses could no longer recess. Recourse had to be made to the retrofocus design principle.

This principle uses an optical trick to make the source of the image rays appear to the film or sensor to be behind the rear of the lens. Thus the back focus, the distance between the rear element and the image plane, appears to be greater than the focal length. The proper term for this type of construction is 'reversed telephoto'. Telephoto denotes a lens in which the image source is made to appear to be up front and ahead of the lens barrel front rim. The telephoto design principle was accepted in photography long before the arrival of the SLR made use of its opposite necessary.

#### TELE AND RETRO

Telephoto design development seems to have stemmed mainly from convenience. You can make, say, a 600mm lens by putting a doublet at the end of a tube of that focal length and attaching it to the camera. Such lenses do exist, but a telephoto optic 2ft (60cm) long is no fun to carry around. The principle is simple enough. The first lens group is positive, converging the image rays to a focus. But a negative, dispersive element, or group, intervenes. As a result, to the film or sensor image plane, the source of the image rays appears pushed away forward, often ahead of the lens barrel itself. Hence, the barrel can be made shorter and more compact.

The first telephoto lenses began to

appear in the 1890s with Mieth in Germany and Dubosc in France claiming points. In Britain we have no doubt that Thomas Dallmeyer (1859–1906) was its inventor. In fact, his father was a German from Westphalia who moved to Britain in 1851. Thomas published a book extolling these lenses, illustrated with images of wildlife, sports and other activities.

The 35mm SLR camera's moving mirror makes retrofocus-design lenses necessary for focal lengths of about 40mm and below. Yet above 60mm the design needs to be telephoto if the lens is to be compact. It is this requirement to change over from retro to telephoto design in the middle of the span that limits superzoom optics to poorer image properties. One result is increasing negative (barrel) distortion towards the shorter focal lengths, and increasing

positive (pincushion) distortion towards the longer end. There are some sensible short-range zoom lenses, usually offered as part of an inexpensive bundle with a DSLR. The specification is unambitious so that results can be good: a typical rating for the APS-C format is 18–55mm. Canon, Nikon, Minolta/Sony and Pentax all supply examples.

#### CHROMATIC ABERRATION

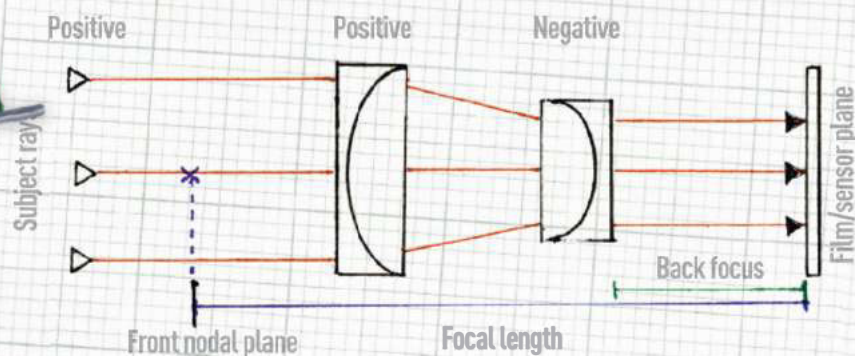
The correction of colour aberration – the inability to bring some colours to a common focus – is vital for image quality, and especially so with digital images. There are two main types: axial and lateral. The first spreads colours along a line perpendicular to the focus plane (the lens axis). The second spreads them sideways, laterally across the image plane. It is this that is particularly damaging

*Geoffrey Crawley explains...*

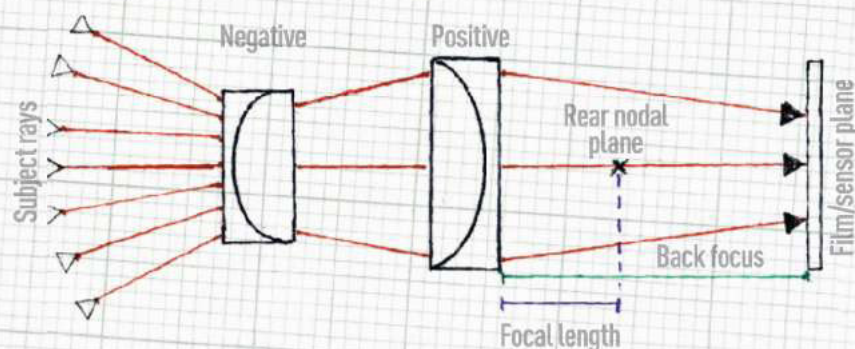
# Telephoto lens design

In part three of his series on lens design, **Geoffrey Crawley** explains the construction of telephoto lenses and looks at what the future holds





In a telephoto lens, the positive front group gathers the rays from the subject and starts converging them to a focus. That is prevented by the negative, divergent group, which as a result appears to push the ray source forward, seemingly outside the lens front rim. Thus, the focal length now exceeds the back focus, which is the distance between the lens's rear element and the film/sensor plane



In a retrofocus, or reversed telephoto, lens, the now front negative group receives imaging rays from a wide angle. They meet the positive group, which makes them converge to a focus. Thus, they appear to come from a source, the rear nodal plane, much closer to the image plane than the focal length. The back focus is now greater than the focal length, allowing room for the flipping reflex mirror

to digital imaging quality. Axial errors are also damaging, but the effects are not so obvious. The way in which they are dealt with is another tool for achieving overall contrast control.

## SECONDARY SPECTRUM

Chromatic aberration came into consideration in telephoto lens design as it became obvious that photographs of distant subjects lacked definition and gave rather washed-out, desaturated colours. It is recognised that the latter is partly due to atmospheric diffusion: the further the subject distance, the more its image is scattered by airborne particles – that is, white light, which dilutes the colours. Analysis also showed a contributory factor that is known as the 'secondary spectrum'. When a lens has been corrected for the primary colours as far as its specification allows, there remain colours in between the corrected peaks that are uncorrected. Taken in sum, they form a secondary colour spectrum that, collectively, is a source of white light adrift in the lens. It saps colour saturation and subject edge definition.

With lenses used for distance work – that is, telephoto – this effect can greatly undermine quality. As such, it soon became clear that new optical glass needed to be researched: glass that could bend light

strongly, offering high refractive index (RI) but with low colour dispersion. A material did exist, but was regarded as too fragile. Fluorite had been used in the 19th century for apochromatic (all colours corrected, including red) microscope objectives. Under the protected conditions of a lab, fluorite was workable. Then, in the 1960s, Canon succeeded in growing fluorite crystal blanks of a size and quality usable in photographic lenses. A photographer was able to shoot a readable document across the floor of the UN in New York – an episode similar to that of the cabinet minister who was obliged to resign after holding documents in a way that allowed a modern telephoto lens to record them legibly.

## FLUORITE AND ED

The correction of the secondary spectrum was excellent, but fluorite's properties remained a drawback. Nikon responded with extra (low) dispersion (ED), a conventional glass medium and therefore free from the fragility problems of fluorite. It does not equal fluorite in high RI with low dispersion, but the available gain and greater practicality immediately won out. Since then, all major optical firms that undertake research into new glass types have produced a range of special glasses of a variety of specifications. For marketing

purposes they are given names such as 'super', 'ultra' and 'extra' low dispersion. Their availability has not only improved telephoto lenses, but is also an integral part of the design of many others across the focal length span.

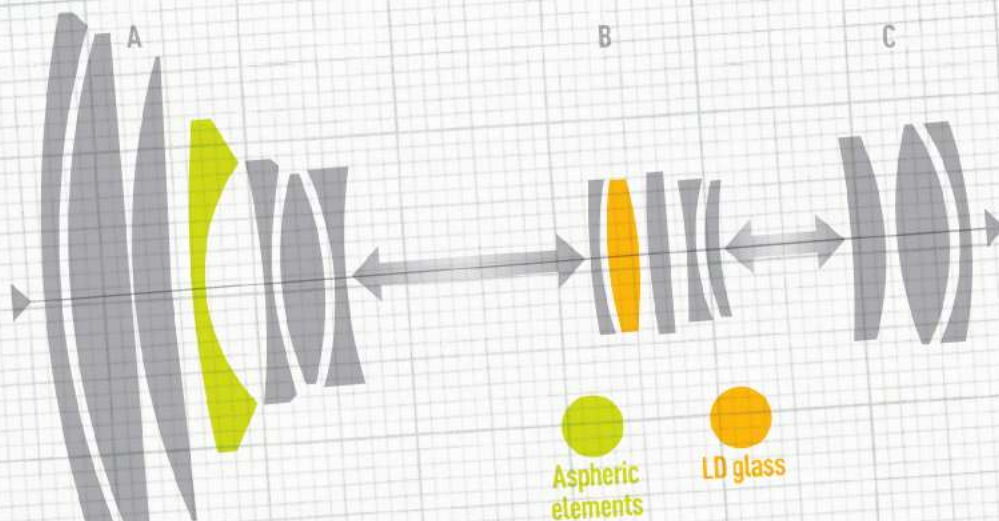
In fact, there is another solution to the problem of the secondary spectrum – an optical system using mirrors is free of it. In photography, the so-called 'mirror lens' uses a combination of mirrors and lens elements, termed a catadioptric system. The difficulty is that many photographers do not like the image properties, especially the 'doughnut' effect of shapes in out-of-focus planes. For action and event coverage it is true that it may be disturbing and unusual. However, the lenses can be made lightweight and very compact – a fraction of the bulk of a refracting conventional lens.

## THE ZOOM

During our review of lens types from wideangle to long-focus and telephoto, most of the tools and materials that go into the make-up of modern zoom lenses have been described. Variable focal length optics are not as recent an addition to the photographer's armoury as might be thought, but back in the 1890s the lenses needed refocusing whenever the focal length was changed. The breakthrough



## Lens construction Geoffrey Crawley explains...



**The focal-length change mechanism.** In this example, focal length is varied by the position of elements in component B. In actual zoom lenses, component A more often moves to and fro from component B, giving an extension of barrel length. A practical, properly corrected modern lens needs this basically triplet design evolved with multiple elements, aspherics and ED glass. Wider aperture, wide-span zoom lenses may be based on the four-glass cemented triplet (Tessar) type or more complex five-glass designs. Hence, there may be as many as 21 elements in a zoom lens

came in 1946 when US-based Dr F Back, formerly of Voigtlander, made a design that maintained focus. He called it the Zoomar, from which we derive the globally used term 'zoom'. First used as a movie camera lens for sports coverage, it was inevitably developed for still-camera use. And so, in 1959, the Back Voigtlander 32-68mm f/2.8 for single-lens reflex cameras was launched. Since then, the zoom lens has not looked back, and the new tools – low dispersion glasses, aspherics, advanced anti-reflection coatings and so on – have contributed to a zoom performance not possible half a century ago. Image quality may not please the hypercritical, but it mostly does the job. Also, some movie directors and cameramen do not like the difference between a shot in which subject size is changed by tracking the camera backwards and forwards, and that when the camera is fixed the subject size is varied by changing the focal length. Yet the saving in cost and weight over a number of

monofocal optics cannot be ignored.

How, then, is a zoom lens configured? It has groups that relate to normal lens design. A three-group zoom, the simplest, resembles a front-cell-focusing triplet lens on the old folding bellows cameras that were very popular between the wars. That focusing, in fact, was a focal-length-changing device. We can move onto the equivalent of the four-glass cemented triplet (Tessar) type and, for wide apertures such as f/2.8, to more complex configurations that are relatives of the Sonnar and Speed Panchro.

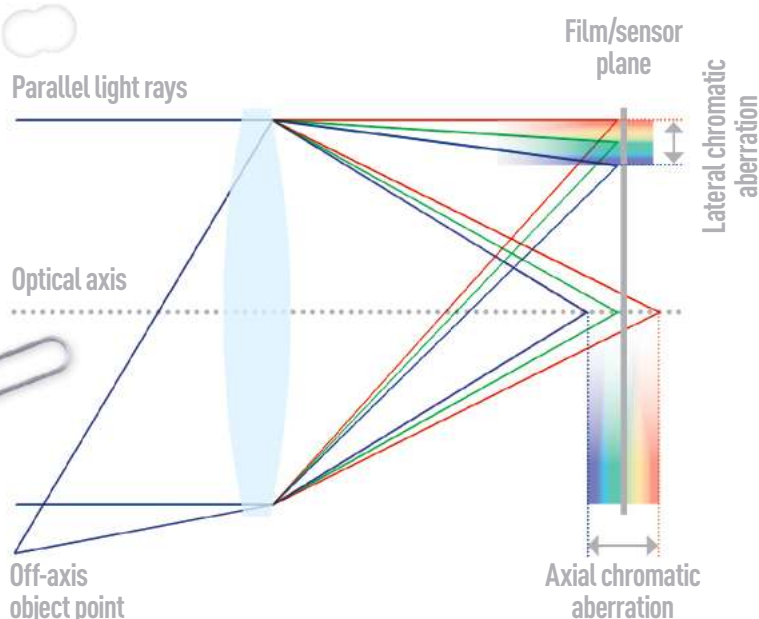
As design improves, the demands on the mount engineers to maintain absolute precision increase with it. A 0.1mm error in a group's centring travel is said to be sufficient to noticeably affect quality in a wide-aperture zoom. That standard has to be maintained over focusing, zooming, floating elements, anti-shake module, and so on. The mount engineer is at least as important as the optical designer.

## THE FUTURE

As technology advances, complexity is usually replaced by simpler solutions. Looking at the multi-element, multi-group wonders we have today, it is difficult to believe they will not be replaced by simpler constructions at some point in the future. Lens development is camera-driven; the flipping mirror, box and mechanism of the SLR could be replaced by Live View on the camera back and a direct optical-type view provided electronically through the viewfinder. The absence of the mirror would allow shorter-focal-length lenses to recess as they once did on coupled rangefinder cameras. It would permit more compact zoom optics and less complex retrofocus lenses generally. Meanwhile, optical glass research continues, and there is always the possibility of new optical media with characteristics that change across the lens element's diameter.

The possibility of lens-aberration correction, post-exposure and in-camera, has already been experimented with. On attachment, the camera recognises the lens and switches to aberration correction, applying routine adjustments to its images: chromatic aberration or curvilinear distortion, for example. There are already routines for post-capture editing that do this.

Vignetting is another candidate for auto-correction. The ability to leave some correction parameters to the cameras in a camera-companion routine would simplify the designer's task, provided the lens remains compatible with the cameras on the market. However, we can be pretty sure that the gear our successors will be using in, say, 2060, will be rather different from today's mix of hangovers from film days and new kit designed to work efficiently on the digital medium. Plus, research continues into new types of sensors that give virtually the same continuous recording surface of film. If successful, this would allow lenses to reach their maximum performance and might spell the slow demise of film manufacture. **AP**



**The two main forms of chromatic aberration:** (1) axial, in which the spread of colour is along a line perpendicular to the image plane; and (2) lateral, in which the colour spread is sideways across the image plane



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CANON 24mm f2.8 EF	MINT BOXED £279.00
CANON 24mm f2.8 EF	MINT £59.00
CANON 17 - 85mm f4.5 IMAGE STABILISER	MINT £269.00
CANON 18 - 135mm f3.5-5.6 USM IMAGE STABILISING	MINT £279.00
CANON 20 - 35mm f3.5-5.6 USM	MINT BOXED AS NEW £1,195.00
CANON 28 - 80mm f3.5-5.6 USM	MINT £99.00
CANON 28 - 105mm f3.5-5.6 USM + HOOD	MINT £169.00
CANON 28 - 135mm f3.5-5.6 USM (IMAGE STABILISER)	MINT BOXED £319.00
CANON 35 - 80mm f4.5 EF ZOOM LENS	MINT £39.00
CANON 70 - 300mm f4.5-5.6 USM IMAGE STABILISER	MINT BOXED £365.00
CANON 75 - 300mm f4.5-5.6 USM MK III (LATEST)	MINT BOXED AS NEW £1,689.00
CANON 75 - 300mm f4.5-5.6 USM L* (LATEST)	MINT CASED £1,290.00
CANON EF 2.0 EXTENDER	MINT BOXED £215.00
CANON FIT JESSOPS 2 x TELECONVERTER (T1PLUS)	MINT CASED £79.00
CANON EXTENSION TUBE EF12 MKI	MINT BOXED £55.00
CANON ANGLE FINDER C	MINT BOXED AS NEW £145.00
CANON PB E2 BOOSTER FOR EOS 1V/EOS etc	MINT - BOXED £99.00
CANON PB E2 BOOSTER FOR EOS 1V/EOS etc	MINT £75.00
CANON BP - E1 BATT PACK FOR EOS 1V/EOS 3 etc	MINT £59.00
CANON 540 EZ FLASH + INST	MINT CASED £109.00
CANON 540 EZ FLASH + INST	MINT CASED £99.00
CANON 430 EZ FLASH	MINT CASED £75.00
CANON TC 80N REMOTE CONTROLLER	MINT BOXED £99.00
CANON RS 90ES REMOTE CONTROLLER	MINT £10.00
CANON LC3 TRANSMITTER AND RECEIVER	MINT £179.00
CANON LC4 TRANSMITTER AND RECEIVER	MINT £225.00
CANON LC-5 WIRELESS REMOTE CONTROLLER SET	MINT BOXED AS NEW £279.00
SIGMA 20mm f1.8 EF DG ASPHERIC RF (LATEST)	MINT BOXED £345.00
SIGMA 20mm f1.8 EF DG ASPHERIC RF (LATEST)	MINT - CASED £299.00
SIGMA 28mm f1.8 EF DG ASP (TEST) UNUSED	MINT BOXED £279.00
SIGMA 30mm f1.4 EF DG HSM (LATEST)	MINT CASED £315.00
SIGMA 50mm f2.8 EF DG ASP (TEST) UNUSED	MINT BOXED AS NEW £1,745.00
SIGMA 12 - 24mm f4.5-5.6 EX DG HSM (LATEST)	MINT BOXED AS NEW £465.00

SIGMA 55 - 200mm f4.5-6.3 DC	MINT £59.00
SIGMA 100 - 300mm f4.5-6.3 XR Di LD ASP MACRO VC	MINT BOXED £365.00
TAMRON 16 - 50mm f2.8 ATX DX Superb lens (LATEST) MINT BOXED AS NEW	£445.00
TOKINA 10 - 35mm f2.8 ATX PRO + HOOD + CASED	MINT BOXED £225.00

## Contax 'G' Compacts & SLR

CONTAX 28mm f2.8 BIOGON 'G'	MINT CASED £175.00
CONTAX 30mm f2.8 SONNAR 'G'	MINT BOXED £139.00
CONTAX 35 - 70mm f3.5-5.6 VARIO SONNAR T*	MINT BOXED £399.00
CONTAX TL4 140 FLASH	MINT CASED £49.00
CONTAX TL4 200 FLASH	MINT CASED £95.00
CONTAX TL4 200 FLASH BLACK	MINT CASED £95.00
CONTAX LEATHER ERC + LONG FRONT COVER 'G2'	MINT £79.00
CONTAX ERC SHORT/LONG FRONT COVER ONLY 'G2'	MINT £35.00
CONTAX TITANIUM HOODS, FILTERS, etc. FOR 'G'	MINT BOXED PHONE PLEASE
CONTAX ARIA BODY (SUPERB STRAP INSTRUCTIONS)	MINT BOXED £325.00
CONTAX ST BODY	EXC++ £299.00
CONTAX F10 II QUARTZ BODY	EXC++ £199.00
CONTAX FIT YASHICA 28mm f2.8 SUPERB CONDITION	MINT £95.00
CONTAX 45mm f2.8 TESSAR PANCAKE	MINT £175.00
CONTAX 200mm f3.5 TELE TESS T* AE	MINT £199.00
CONTAX 28 - 70mm f3.5-5.6 VARIO SONNAR T* MM	MINT CASED £299.00
CONTAX 28 - 60mm f3.5-4 VARIO SON	MINT £399.00
CONTAX TL4 20 FLASH	EXC++ £299.00
CONTAX TL4 30 FLASH	MINT £249.00
CONTAX T3 COMPACT (SUPERB LENS)	MINT BOXED AS NEW £375.00

## Leica 'M', 'R' & Screw & Binoculars

LEICA MP 0.72 BLACK PAINT BODY	MINT BOXED £1,945.00
LEICA MT FLAG LTD EDITION UK 30	MINT BOXED £1,585.00
LEICA MT BODY BLACK	MINT £1,275.00
LEICA M6 TTL CHROME (SUPERB AS NEW CONDITION)	MINT BOXED £1,095.00
LEICA M6 TTL CHROME BODY	MINT BOXED £975.00
LEICA M6 TTL BLACK BODY	MINT BOXED £995.00
LEICA M6 TITANIUM BODY	MINT £399.00
LEICA M6 BODY BLACK	MINT BOXED £775.00
LEICA M4-2 BLACK BODY	MINT - BOXED £775.00
LEICA M3 BODY DW - LEICA ERC CASE	EXC++ £445.00
LEICA M3 BODY (REALLY NICE USER)	EXC++ CASED £399.00
LEICA M2 BODY + LEATHER ERC	MINT £495.00
KONICA HEKAR F4 + 50mm f2 + KONICA FLASH	MINT BOXED AS NEW £799.00
LEICA 50mm f3.5 COLL. ELMAR	MINT £245.00
LEICA 50mm f2 COLLAPSIBLE SUMMICRON	MINT IN KEPPER £395.00
LEICA 50mm f2 SUMMICRON BLACK (LATEST NOT 6 BIT)	MINT BOXED £395.00
LEICA 50mm f2 SUMMICRON CHR (LATEST NOT 6 BIT)	MINT BOXED £395.00
LEICA 50mm f2.8 ELMAR COLLAPSIBLE	MINT BOXED AS NEW £945.00
LEICA 50mm f2 SUMMICRON BLACK 6 BIT	MINT BOXED £395.00
LEICA 50mm f2 SUMMICRON CHR (LATEST NOT 6 BIT)	MINT BOXED AS NEW £985.00
LEICA 90mm f2 SUMMICRON CHROME	MINT BOXED AS NEW £985.00
LEICA 135mm f2.8 ELMARIT M FOR M3	MINT £345.00
LEICA 135mm f4.5 HEXTOR + HOOD + FINDER M	MINT £495.00
LEICA 200mm f4 TELEY + HOOD	MINT £495.00
LEICA HANDGRIP FOR M6/MMP etc	MINT BOXED AS NEW £79.00
LEICA MOTOR M	MINT BOXED AS NEW £395.00
LEICA SF20 FLASH	MINT CASED £119.00
LEICA EDC LEATHER CASE (114878)	MINT BOXED £195.00
LEICA ERC CASE FOR M6/M6T BLACK	MINT BOXED £195.00
LEICA MA-2 WINDER BLACK	MINT BOXED £175.00
LEICA MB FIT MD-GRIP (PHOTO EQUIPNET)	MINT £69.00
LEICA FIT MB BATTERY (LOW USE)	MINT £40.00
LEICA 65mm f3.5 ELMAR + 16464 FOC RING	MINT BOXED £395.00
LEICA 90mm f4 ELMAR SCREW CH - 90mm FDR	MINT CASED £245.00
LEICA 90m f4 HEAD - 16467 FOC MOUNT FOR VISO	MINT £195.00
LEICA 90m f4 ELMAR SCREW BLACK	EXC++ £395.00
LEICA 18mm f2.8 ELMARIT R ROM R	EXC++ £1,095.00
LEICA 21mm f4 ELMAR SCREW BLACK	MINT BOXED £599.00
LEICA 50mm f1.4 SUMMILUX (2 CAM)	EXC++ £359.00
LEICA 100mm f2.8 APO MACRO ELMARIT R	MINT CASED £1,195.00
LEICA 180mm f4 ELMARIT R 3 C	EXC++ £345.00
LEICA 560mm f6.8 TELEY R	MINT £395.00
LEICA 28 - 70mm f3.5-5.6 VARIO ELMAR ROM	MINT £399.00
LEICA 35 - 70mm f3.5 VARIO ELMAR R 3 CAM	EXC++ £299.00
LEICA 70 - 210mm f4 VARIO ELMAR R	EXC++ £399.00
LEICA MOTOR WINDER R999	MINT £145.00
LEICA 10 x 25 BGA TRINOVID COMPACT BINOS	MINT CASED £295.00
MINOX 10x24 BR COMPACT BINOCULARS + CASE	MINT £125.00
SWAROVSKI 7 x 42 SL BINOCULARS	MINT CASED £995.00
SWAROVSKI 10 x 42 EL BINOCULARS	NEW/NEW £995.00

## Voitlander & Ricoh & Compacts

VOITLANDER BESSA R2a BLACK BODY	MINT BOXED AS NEW £499.00
VOITLANDER 15mm f4.5 SW HELIAR ASP + FDR (B)	MINT BOXED £299.00
VOITLANDER 25mm f4 SKOPAR + FINDER SLR	MINT BOXED £295.00
VOITLANDER 90mm f3.5 APO LANIHAR (BLK)	MINT BOXED £345.00
BRONICA GR14 21mm f2.8 FINDER FITS ALL R/FIND CAMS	MINT BOXED £175.00
RICOH GR1 DATA BODY PRESENTATION BOX	MINT BOXED £185.00
RICOH GR10 FILM COMPACT	MINT £99.00

## Medium & Large Format

BRONICA ETRS/COMP + 75mm F.W. FL120 BACK	MINT BOXED £289.00
BRONICA ETRS/75mm 120 BACK + WLF LTD ED SLIDER	MINT £245.00
BRONICA ETRS + 75mm - 120 BACK + PRISM FINDER	MINT £179.00
BRONICA ETRS BODY ONLY	MINT £75.00
BRONICA ETRS BODY + 120 BACK	EXC++ £395.00
BRONICA 40mm f4.0 ZENZANON MC	MINT £195.00
BRONICA 40mm f4.0 PE LENS	MINT BOXED £299.00
BRONICA 50mm f2.8 ZENZANON MC	MINT £145.00
BRONICA 100mm f4 MACRO ZENZANON PE	MINT £299.00
BRONICA 105mm f4.5 ZENZANON MACRO PE 1:1	MINT BOXED £299.00
BRONICA 150mm f3.5 ZENZANON E MC	MINT BOXED £149.00
BRONICA 150mm f3.5 ZENZANON E MC	MINT £129.00
BRONICA 150mm f4 PE	MINT £195.00
BRONICA 150mm f4 PE	MINT £399.00
BRONICA 250mm f5.6 MC	MINT + HOOD £199.00
BRONICA 500mm f8 ZENZANON	MINT £795.00
BRONICA MOTOR DRIVE E II	MINT BOXED £195.00
BRONICA E120 BACK	EXC++ £39.00
BRONICA ETRS 120 BACK	MINT £69.00
BRONICA ACTA PRISM FINDER E	MINT BOXED £189.00
BRONICA AEII PRISM FINDER	MINT £99.00
BRONICA ETRS AEIII PRISM FINDER WITH SPOT	MINT £265.00
BRONICA SOA BODY WITH 80mm PS AND 120 BACK	MINT £345.00
BRONICA SOAM BODY + GRIP DRIVE	MINT £125.00
BRONICA 50mm f3.5 ZENZANON S	EXC++ £149.00
BRONICA 100mm f4 MACRO ZENZANON PE	MINT £299.00
BRONICA 150mm f3.5 ZENZANON S	MINT £165.00
BRONICA SO4 120 BACK	MINT BOXED £99.00
BRONICA SO 120 BACK	EXC++ £35.00

CONTAX 645 A/F COMP WITH PRISM, BACK, 80mm f2	MINT £995.00
CONTAX 45mm f2.8 DISTAGON T* LENS FOR 645 A/F	MINT CASED £865.00
CONTAX 140mm f2.8 SONNAR T* LENS FOR 645 A/F	MINT CASED £999.00
CONTAX 210mm f4 SONNAR T* LENS FOR 645 A/F	MINT £799.00
CONTAX 120 BACK FOR 645 A/F	MINT £125.00
CONTAX FIT 645 A/F PHASE 1 DIGITAL BACK	MINT £995.00
FLUO GW 670 MK II CM 90mm f3.5 LENS	MINT BOXED £995.00
MAMIYA 55mm f4 LENS FOR MAMIYA SL	MINT + HOOD £345.00
MAMIYA 150mm f4.5 L G LENS FOR MAMIYA 6	MINT £399.00
MAMIYA 65mm f4 LENS FOR RZ	MINT £299.00
MAMIYA 250mm f4.5 LENS FOR RZ	MINT £299.00
MAMIYA BACKS BELLOWS HOOD/POD BACK	IN STOCK PHONE
MAMIYA 150mm f3.5 A/F FOR 645 A/F	MINT £299.00
MAMIYA 210mm f4 SENIOR C FOR 645	MINT CASED £195.00
MAMIYA POLAROID FILM HOLDER FOR 645 A/F	NEW £159.00
MAMIYA 120 BACK FOR RB	MINT BOXED £99.00
YASHICA/MT 1245 MINT CASED + HOOD	MINT CASED £245.00

## Hasselblad

HASSELBLAD X PAN + 45mm + ALL ACCESSORIES	MINT BOXED £1,075.00
HASSELBLAD 90mm f4 FOR X PAN	MINT BOXED £395.00
HASSELBLAD 90mm f4 FOR X PAN	MINT IN KEPPER £395.00
HASSELBLAD H1H2 UPGRADE +4E FOR MAG.80mm	MINT BOXED £1,765.00
HASSELBLAD 500ELM + A12 BLACK BACK	MINT BOXED £1,765.00
HASSELBLAD 210mm f4H2 FOR H SYSTEM	MINT BOXED £1,299.00
HASSELBLAD HC 50 - 110 f3.5 FOR H SYSTEM	MINT BOXED £2,495.00
HASSELBLAD 90mm f4 FOR X PAN	MINT £1,195.00
HASSELBLAD 5000M + WLF-ABACK + 80mm CF	EXC++ £795.00
HASSELBLAD 500ELM + A12 + 80mm f2.8 T*	MINT BOXED £595.00
HASSELBLAD 40mm f4 DISTAGON CF	MINT £1,095.00
HASSELBLAD 150mm f4 SONNAR CF	EXC++ £999.00
HASSELBLAD 250mm f6 SONNAR T* CF	MINT £999.00
HASSELBLAD PLAIN PRISM	EXC £795.00
HASSELBLAD PM2 PRISM	EXC++ £1,195.00
HASSELBLAD PM PRISM	MINT £1,195.00
HASSELBLAD A12 BACK BLACK AND SILVER	MINT BOXED £445.00
HASSELBLAD A12 BACK BLACK AND SILVER	MINT - £99.00

## Nikon Auto-Focus

NIKON F5 BODY	MINT	£399.00
NIKON F5 BODY	EXC++	£235.00
NIKON F100 BODY	MINT	£1195.00
NIKON F90X BODY WITH NIKON MB10 BATT GRIP	MINT	£1119.00
NIKON F90X BODY	EXC++	£69.00
NIKON F90 BODY SILVER	MINT	BOXED £395.00
NIKON F55 BODY	MINT	BOXED £395.00
NIKON 18mm 2.8 A/F "D" + HOOD (SUPERB LENS)	MINT	BOXED £295.00
NIKON 18mm 2.8 A/F "D" + HOOD	MINT	CASED £245.00
NIKON 45mm 2.8 ED PC-E Micro Nikkor ED (UNUSED)	MINT	BOXED AS NEW £1,195.00
NIKON 50mm 1.8 A/F "D"	MINT	£99.00
NIKON 105mm 2.8 "G" IF ED AFS VIBRATION REDUCT	MINT	NEW £1,795.00
NIKON 200mm f2.8 "G" IF ED AFS VIBRATION REDUCT	MINT	CASED £2,565.00
NIKON 500mm f4 IF ED "P" WITH CPU DIGI COMPAT	REDUCTION FLT CASE	£2,795.00
NIKON 12 - 24mm f2.8 DX AFD AFS (1 ONLY)	MINT	BOXED £545.00
NIKON 18 - 85mm f3.5-5.6 "G" ED DX AFS VIBR RED	MINT	BOXED £399.00
NIKON 17 - 55mm f2.8 DX IF	MINT	BOXED AS NEW £399.00
NIKON 18 - 35mm f3.5 A/F "D" ED IF	MINT	BOXED AS NEW £395.00
NIKON 18 - 55mm 3.5-5.6 "G" ED DX AFS VIBR RED	MINT	£399.00
NIKON 18 - 70mm 3.5-5.6 A/F "D" ED + HOOD	MINT	£1145.00
NIKON 18 - 135mm 3.5-5.6 "G" ED AFS DX + HOOD	MINT	£175.00
NIKON 18 - 200mm 3.5-5.6 "G" ED DX AFS VIBR REDUCT	MINT	BOXED AS NEW £395.00
NIKON 24 - 120mm 3.5-5.6 A/F IF ED AFS VIB RED	MINT	BOXED AS NEW £375.00
NIKON 28 - 80mm 3.5-5.6 "G" A/F	MINT	£99.00
NIKON 28 - 105mm 3.5-5.6 "G" A/F "D"	MINT	£175.00
35 - 105mm 3.5-5.6 A/F NIKKOR ZOOM	MINT	BOXED £145.00
NIKON 35 - 105mm 3.5-5.6 "G" IF ED AFS VIBR REDUCTION	MINT	BOXED £185.00
NIKON 70 - 300mm 4.5-5.6 "G" IF ED AFS "D"	MINT	BOXED £175.00
NIKON 70 - 300mm 4.5-5.6 "G" IF ED AFS "D"	MINT	BOXED £175.00
NIKON 70 - 300mm 4.5-5.6 "G" IF ED AFS VIBR REDUCT	MINT	CASED £369.00
NIKON 80 - 200mm 2.8 A/F "D" IF BOXED 2 TOUCH	EXC++	CASED £595.00
NIKON MF 23 DATABOOK FOR NIKON F5	MINT	£295.00
NIKON MF 23 GRIP FOR NIKON F5	MINT	BOXED AS NEW £395.00
NIKON SS 225 FLASH UNIT	MINT	BOXED £525.00
NIKON SS 24 FLASH UNIT	MINT	BOXED £455.00
NIKON SS 24 FLASH UNIT FOR F4 ETC	MINT	CASED £395.00
NIKON SS 24 FLASH	EXC++	£99.00
NIKON SS 28 FLASH	MINT	CASED £395.00
NIKON TC 2IE AFS TELECONVERTER	MINT	BOXED AS NEW £255.00
NIKON TC 2E AFS TELECONVERTER	MINT	BOXED £95.00
NIKON TC 1E IS GRIP FOR NIKON F100	MINT	BOXED £59.00
SIGMA 28mm 1:8 EX DG MC ASPHERIC (LATEST)	MINT	BOXED £345.00
SIGMA 28mm 1:8 EX DG MACRO ASPHERIC	MINT	BOXED £245.00
SIGMA 30mm 1:4 EX DC HSM (LATEST)	MINT	BOXED £315.00
SIGMA 70mm 1:2.8 EX DG MACRO (LATEST)	MINT	BOXED AS NEW £299.00
SIGMA 105mm 1:2.8 EX DG DC EX HSM	MINT	CASED £225.00
SIGMA 18 - 200mm 1:3.5 EX DC HSM OPT STABILISING	MINT	BOXED AS NEW £225.00
SIGMA 18 - 250mm 3:5-5.6 EX DC HSM OPT STABILISING	MINT	BOXED AS NEW £325.00
SIGMA 28 - 135mm 3:5-5.6 MACRO	MINT	BOXED £129.00
SIGMA 28 - 300mm 3:5-5.6 EX DG MACRO SLD GLASS	MINT	BOXED £119.00
50 - 150mm 2:8 EX MKII APO EX HSM	MINT	BOXED £459.00
50 - 150mm 2:8 EX DC EX HSM	MINT	BOXED £399.00
SIGMA 55 - 200mm 4:5 EX HSM	MINT	BOXED £95.00



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5D MK II + 17 - 40mm L £2349  
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EOS 50D Body £669  
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EOS 50D Body £649

### CANON ACCESSORIES

1.4 X EXTENDER II	£303
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EF12 EXTENSION TUBE	£79
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580EX MK II SPEEDLITE	£369
430 EX II SPEEDLITE	£225
MACROLITE MR1-EX	£487
CANON TWIN LITE MT24EX	£789
STE2 TRANSMITTER	£199
OFF CAMERA SHOE CORD 3	£60
KENRO EXTENSION TUBE SET	£129
BP511A BATTERY 20/30/40/50	£89
LP-E6 BATTERY 50 MKII	£69
LP-E6 BATTERY 1DMK3 1DSMK3	£129
LP-E5 BATTERY 450D	£44
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BGE2N GRIP - 40D + 50D	£159
BG-E6 GRIP - 5D MKII	£229
BG-E7 GRIP - 7D	£164

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17-55mm EFS	£789	24-70mm f2.8L	£995	50mm f1.4	£315	70 - 200 f2.8L IS MK II	£2169	300mm f2.8L IS	£3885
17-85mm EFS IS	£399	24-105 f4L IS Whitebox	£795	50mm f1.2L	£1360	70 - 300 IS	£409	400mm f5.6L	£1239
18 - 200mm EFS IS	£ 439	28-135mm f3.5/5.6 IS	£399	70-200mm f4L	£558	85mm f1.8	£330	400mm f2.8 L IS	£6659
60mm Macro EFS	£339	TSE 17mm f4L	£2075	70-200 f4L IS	£929	100 f2.8 Macro	£463	400mm f4 DO IS	£5299
16- 35mm f2.8L MKII	£1189	TSE 24mm f3.5L II	£1829	70-200 f2.8L	£1095	100mm f2.8L Macro IS	£799	500mm f4 L IS	£5499
								600mm f4 L IS	£ 7399



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D300S + MB-D10 Grip	£1320	D5000 18-55 VR II	£549	600mm AFS VR	£6999
D300S + 12 - 24mm DX	£1949	D90 Body	£ 714	1.4x / 1.7x / 2x Converter	£316
D300S + 18-200 VR II	£1677	D90 + 18 - 105mm VR	£ 819	MB-D10 Grip Special	£199
D300S + 16-85mm VR	£1565	14-24mm f2.8 AFS	£1319	10.5mm f2.8 DX	£539
D300S + 17-55 f2.8 DX	£2189	24-70mm f2.8 AFS	£1249	24mm f2.8 AFD	£342
D700 Body	£1769	PC-E 24mm f 3.5	£1419	New 24mm f1.4G AFS	£1749
D700 + 50mm f1.4 AFS	£2049	10 - 24mm AFS DX	£619	35mm f1.8 AFS G	£179
D700 + 14 -24 f2.8	£3049	16-35mm f4 AFS VR	£879	50mm f1.8 AFD	£112
D700 + 24 -70 f2.8	£2999	16-85mm AFS VR	£439	50mm f1.4 AFS G	£295
D700 + 105mm VR	£2389	12-24mm f4 DX	£835	85mm f1.8 AFD	£309
D700 + SB900	£2099	17 - 35mm f2.8 AFS	£1549	85mm f1.4 AFD	£899
D3S Body	£3595	17-55mm f2.8 DX	£1087	60mm f2.8 Micro AFS	£399
D3S + 50mm f1.4 AFS	£3870	18 - 105mm DX VR	£215	85mm f3.5 Micro AFS	£429
D3S + 24-70 f2.8	£4795	18 - 200mm DX VR II	£529	105mm f2.8 Micro VR	£626
D3S + 14-24 f2.8	£4895	70-200mm f2.8 AFS VR II	£1649	SB900 Speedlight	£336
D3S + 70 -200 f2.8 VR II	£5200	70-300mm AFS VR	£395	SB600 Speedlight	£233
D3X Body + Free Battery	£4799	80-400mm AFD VR	£1199	SB-R1 Macro flash	£417
D3X + 50mm f1.4 AFS G	£5189	200-400 f4 AFS VR II	£5895	SB-R1C1 Commander kit	£599
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WFT-E4 (EOS SD Mk II)	£799.00	RS-R08N3 (50D, 5D, 1D III 1Dx III)	£199.99	DCC 90 Soft Case (S2 IS/ S3 IS)	£23.00
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WFT-E5B (EOS 7D)	£449.99	LC-5 Wireless Controller Set	£334.99	DCC 600 Soft Case (G7I/G9I)	£23.00
<b>Batteries</b>		<b>Waterproof Housings</b>		DCC 660 Soft Case (G11)	£23.00
NB 2LH (G7, EOS 350D, 400D)	£62.00	WP DC26 (IXUS 870 IS)	£180.00	DCC 700 Soft Case (A550 IS)	£23.00
NB 6L (for Digital IXUS 85 IS)	£43.00	WP DC27 (IXUS 980 IS)	£180.00	DCC 650 Soft Case (G10)	£23.00
NB 7L (for Powershot G10)	£56.00	WP DC28 (PowerShot G10)	£180.00	DCC 750 Soft Case (SX110 IS)	£23.00
NB 9L (for IXUS 1000 HS)	£43.00	WP DC29 (IXUS 95 IS)	£199.99	DCC 800 Soft Case (SX10 IS)	£27.00
BP 511A (G6, 300, 400, 500, 5D)	£76.00	WP DC32 (IXUS 110 IS)	£179.99	DCC 1400 Soft Case (S90)	£23.00
LP E4 (for EOS 1D/ 1Ds Mark III)	£116.99	WP DC33 (IXUS 120 IS)	£175.00		
LP E5 (EOS 450D/ 500D)	£49.99	WP DC35 (PowerShot S90)	£175.00		
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**Canon Legria FS306**  
SD Camcorder  
Small & Compact with 41x Zoom  
was £379.00  
**Only £229.99\***



**Canon Legria HF R106**  
HD Camcorder  
Canon's smallest Full HD Camcorder  
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**Value Kit £419.99\***

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**Understanding Your Nikon D90**  
**Wednesday 16th September 2010**  
To explain how best to use your Nikon D90, to navigate the comprehensive menu display and to give the photographer more confidence in exploring the wide range of manual controls available.

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**2 YEAR WARRANTY**

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- Nikon D3100**
- 14.2 MP DX-format CMOS image sensor
  - EXPEED 2 image processing engine
  - High ISO (100-3200) light sensitivity - extendable up to 12800
  - D-Movie - full HD (1920 x 1080) movie clips
  - Large 3.0", high-resolution LCD monitor
  - Lightweight body and superior ergonomics
- D3100 Body SRP £499.99 | D3100 + 18-55mm VR SRP £579.99

**Exceptional Agility. Creative Command.**

**D300s**

**2 YEAR WARRANTY**

- 12.3 megapixel DX format CMOS image sensor
- 7 fps continuous shooting
- Records beautiful, high-definition (HD) movie clips
- ISO 200-3200 extendable up to ISO 6400
- D-Movie with stereo microphone terminal
- Dual card slots for CF/SD memory cards

**Purchase any lens over the value of £400 with the Nikon D300s and claim £200 cashback!!**

Body SRP £1,499.99

**Body Price £1,129.99**

**+18-200 VR II £1,649.99**

**ADD YOUR ACCESSORIES - WHEN BOUGHT WITH DEALS**

SanDisk 8GB Ext. CF (UHS-I) <b>£69.99*</b>	Nikon EN-EL3e Batt (D300s) <b>£40.00*</b>
Nikon MB-D10 Batt. Grip <b>£217.99*</b>	Nikon CF-D200 Case (D300s) <b>£57.99*</b>
Adobe Photoshop Elements 8 <b>£49.99</b>	Nikon SB-600 Speedlight <b>£234.99*</b>
Kata DR-465 DPS Rucksack <b>£35.00*</b>	Nikon SB-900 Speedlight <b>£309.99*</b>

**COMPACT D-SLR**

**Nikon D5000**

A powerful and versatile SLR camera that delivers superb still images & high definition D-movie clips with sound.

**Body Price £429.00**  
D5000 + 18-55mm VR **£469.99**  
Nikon CF-DC2 Semi Soft Case **£40.99**  
Nikon EN-EL9a Battery **£39.99**

**COMPACT D-SLR**

**Nikon D90**

The D90 fuses technology from Nikon's flagship DSLRs with an array of functions to help you achieve superior results.

**Body Price £589.99**  
D90 + 18-105mm VR **£779.99**  
Nikon CF-D80 Semi Soft Case **£46.99**  
Nikon EN-EL3e Battery **£50.00**

**FULL FRAME D-SLR**

**Nikon D700**

The D700 incorporates groundbreaking technologies and performance into a discreetly-sized body.

**Body Price £1,756.99**  
D700 + 105mm VR Micro **£2,377.98**  
D700 + 14-24mm f/2.8 ED **£3,036.98**  
Nikon EN-EL3e Battery **£50.00**

**FULL FRAME D-SLR**

**Nikon D3x**

The D3x redefines high resolution SLR photography, whether you shoot in the studio or out on location.

**Body Price £4,829.99**  
D3x + 24-70mm f/2.8 ED **£6,013.99**  
D3x + 14-24mm f/2.8 ED **£6,119.98**  
Nikon EN-EL4a Battery **£100.00**

**EVEN MORE NIKON**

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Coolpix L21 **£74.99**  
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CS-501 case for 5700/5600/5550 **£9.99**  
Leather case for 2500 / 57C **£2.50**  
CS-L01 case for L10/L18 (16) **£9.99**  
CS-CPL10/11/12 case for L11/L12 **£2.50**  
CS-S22 Black case for S8000 **£15.70**  
CS-P04 case for P6000 **£39.99**  
CS-P05 case for P90 **£24.99**  
CF-DC1 semi soft case for D40 **£46.99**  
CF-DC2 semi soft case for D5000 **£40.99**  
CF-D200 semi soft case for D300 **£65.99**

**NIKON CHARGERS**

MH-18a Quick Charger (EN-EL3a) **£34.99**  
MH-21 Quick Charger (EN-EL4) **£172.99**  
MH-23 Charger (EN-EL5) **£46.99**

**NIKON GP-1 GPS UNIT**

Global Positioning System (GPS), attaches to D90, D5000 or D3x cameras & records the exact location of the camera when a picture is taken  
SRP £237.99

**NIKON SCANNERS**

Coolscan 9000 ED (Film/Slide) **£2,799.00**  
SF-210 Slide Feeder for C/S 5000 **£499.99**

**NIKON GRIPS**

MB-D80 (D80 / D90) **£119.00**  
MB-D200 (D200) **Used from £69.90**  
MB-D10 (D300 / D700) **£229.99**

**NIKON SOFTWARE**

Camera Control Pro 2 **£149.99**  
Capture NX2 **£144.99\***

**NIKON WT-4B**

High performance Wireless Transmitter for use with the Nikon D300, D3 and D3x.  
SRP £701.99

**Only £199.99\***

**Only £549.99**

**Only £39.99\***

**NIKON LENSES**

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AF-D 14mm f/2.8	£1,226.00
AF-D 16mm f/2.8	£599.99
AF-D 20mm f/2.8	£461.00
AF-S 24mm f/1.4 G ED	£1,849.99
AF-D 24mm f/2.8	£337.99
AF-S 24mm f/2.8 ED Macro	£1,399.00
AF-D 28mm f/2.8	£224.99
AF-D 35mm f/2.0	£255.00
AF-S 35mm f/1.8 DX	£163.99
AF-S 35mm f/2.8 ED Micro	£1,399.00
AF-D 45mm f/1.4	£235.00
AF-S 50mm f/1.4 G	£298.00
AF-D 50mm f/1.8	£109.99
AF-S 60mm f/2.8 Macro	£969.99
AF-S 60mm f/3.5-5.6 ED Micro	£414.99
AF-D 85mm f/1.8D	£304.99
AF-D 85mm f/1.4 (F)	£899.00
AF-S 85mm f/1.4 G	£1,499.99
AF-S 105mm f/2.8G VR IF-ED Micro	£614.99
AF-S 105mm f/2.8 ED Micro	£1,389.99
AF-DC 105mm f/2.0	£799.00
AF-D 135mm f/2.0	£969.99
AF-D 200mm f/4G IF-ED Micro	£1,135.00
AF-S 200mm f/2.8G IF-ED VR	£3,069.00
AF-S 300mm f/2.8G ED VR II	£3,999.00
AF-S 300mm f/4.0 D IF-ED	£1,819.00
AF-S 400mm f/2.8G ED VR	£6,599.00
AF-S 500mm f/4G ED VR	£5,899.99
AF-S 600mm f/4G ED VR	£6,999.99
AF-S 10-24mm f/3.5-5.6G ED	£599.99
AF-S 12-24mm f/4.0 G IF-ED	£1,278.99
AF-S 14-24mm f/2.8G ED	£876.00
AF-S DX 16-35mm f/4 G ED VR	£399.99
AF-S DX 16-85mm f/3.5-5.6G ED VR	£1,065.00
AF-S DX 17-55mm f/2.8G IF-ED DX	£85.00
AF-S DX 18-35mm f/3.5-5.6G II	£95.00
AF-S 18-105mm f/3.5-5.6G ED VR	£1,195.00
AF-S 18-200mm f/3.5-5.6G IF-ED VR	£1,627.99
AF-S 24-70mm f/2.8G ED	£1,889.99
AF-D 24-85mm f/2.8-4	£518.99
AF-S 24-120mm f/3.5-5.6G IF-ED VR	£549.99
AF-S 24-200mm f/4G ED VR	£1,049.99
AF-S 28-300mm f/3.5-5.6G ED VR	£1,869.99
AF-S 55-200mm f/4.5-5.6G DX Black	£189.99
AF-S 55-200mm f/4.5-5.6G VR DX	£159.99
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AF-S 70-300mm f/4.5-5.6G IF-ED VR	£1,889.99
AF-D 80-400mm f/4G IF-ED VR II	£1,168.99
AF-S 200-400mm f/4G IF-ED VR II	£5,699.00
TC-17E II 1.7x AF-S Teleconverter	£309.00
TC-20E II 2.0x AF-S Teleconverter	£199.99

**NIKON BATTERIES**

EN-EL9 (D40 / D40x)	£35.00
EN-EL3F (D3000 / D2000 / D80 / D700)	£50.00
EN-4 (D1x, D1H, D1X)	£101.99
EN-EL4a (D2G / D3X)	£100.00

**NIKON FLASHGUNS**

SB 400	£129.99
SB 600	£239.99
SB 900	£339.99
SB R200	£189.99
SB 200 Macro Kit R1C1	£599.99

**NIKON BINOCULARS**

**8x21 Sprint Binoculars (Black)**

- Compact and light weight.
  - Close focus distance of 3 m.
  - Multi-layer coated lenses for bright image.
- SRP £89.99

**Only £199.99\*** **Only £549.99** **Only £39.99\***

## PENTAX

**Pro Centre**  
**PENTAX**

**PENTAX K-7**

2 year warranty available

The K-7 is completely ready for action in all possible conditions. Rain, dust, dirt or even frosts of up to -10°C leave it cold.

- 14.6 million pixels
- Sensor shake system
- Video Recording
- 3.0" LCD with Live View

**K-7 Body £758.00**

**K-7 + 18-55mm £799.00**

Please visit our website for even more K-7 offers!



- Pentax D-BG4 Batt. Grip  
Our Price only £229.99  
SRP £269.99
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Our Price only £59.99  
SRP £64.36
- Pentax AF 540 FGZ Flash  
Our Price only £299.99  
SRP £479.99
- Tamrac Adventure 74  
Our Price only £59.99  
SRP £98.99

For even more accessories, see our website

**PENTAX K-x**

2 year warranty available

Advanced features & user-friendly functions ensure an outstanding level of photographic performance within a compact, lightweight body.

- 12.4 million pixels
- User-friendly operation
- 4.7 fps
- 2.7" LCD Screen

**K-x Black + 18-55mm £389.99**

**K-x Black Twin Kit £549.00**

Please visit our website for the other K-x Colours!



- Pentax K-x: Available in 12 different colours!
- Eneloop Charger + 4 Batts  
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SRP £25.49
- Pentax AF 360 FGZ Flash  
Our Price only £269.99  
SRP £329.99
- Lowepro Toploader Zoom 45  
Our Price only £24.99  
SRP £27.99

For even more accessories, see our website

**Pentax Lenses**

14mm f/2.8 DA ED IF SMC	£539.00	200mm f/2.8 SMC DA* ED IF SDM	£799.00	55-300mm f/4.0-5.8	£279.99
15mm f/4 ED AL DA ED AL SMC	£579.00	300mm f/4 SMC DA* ED IF SDM	£1,039.00	55-300mm f/4.0-5.8 (Unboxed)	£159.99
21mm f/3.2 DA ED IF SMC Ltd	£439.00	10-17mm SMC F3.5-4.5 DA ED IF	£449.99	60-250mm f/4.0 ED (IF) SDM	£999.00
31mm f/1.8 FA SMC Limited	£1,099.00	17-70mm SMC DA FA IF SDM	£499.99		
35mm f/2.8 Macro Limited	£459.00	16-45mm f/4 ED AL SMC	£229.99		
40mm f/2.8 SMC Limited	£359.00	16-50mm f/2.8 ED AL IF SDM DA*	£719.99		
43mm f/1.9 SMC FA Limited (Bk)	£699.00	12-24mm f/4 DA ED AL (IF)	£849.00		
50mm f/1.4 SMC FA SMC	£319.99	18-55mm f/3.5-5.6 DA AL II	£24.00		
50mm f/2.8 MACRO DFA SMC	£429.99	18-55mm f/3.5-5.6 DA AL WR	£165.00		
55mm f/1.4 SDM DA*	£599.00	18-55mm DA AL WR (Unboxed)	£50.00		
70mm f/2.4 SMC DA Limited	£449.00	50-135mm f/2.8 ED IF SDM DA*	£765.00		
77mm f/1.8 SMC DA Limited (Bk)	£779.00	50-200mm f/4-5.6	£179.99		
100mm f/2.8 D FA Macro WR	£549.99	50-200mm f/4-5.6 ED WR	£110.00		

**Pentax Lens Deals**

**Pentax 18-55mm f/3.5-5.6 DA AL WR**

**Our Price £50.00**

**Pentax 16-45mm f/4 ED AL SMC**

**Our Price £229.99**

## OLYMPUS

**E-P1**

Not a compact. Not an SLR. It's a PEN.

- 12.3 Megapixels
- Built in IS
- HD Movie
- 3.0" LCD Screen

**E-P1 + 14-42mm £329.00**

**E-P1 Twin Kit + OVF £499.99**

**New Low Price! See our website for more E-P1 Deals**

**E-PL1**

New Generation System Camera

- 12.3 Megapixels
- Built in IS
- HD Movie
- 2.7" LCD Screen

**E-PL1 + 14-42mm £479.00**

**E-P1 Twin Kit + MMF-2 £619.00**

**E-PL1 Accessory Kit - Includes Card, Bag & Marriott Hotel Voucher! 1/2 PRICE when bought with E-PL1**

**£49.99 bwb or £99.99**

**E-P2**

Not a compact. Not an SLR. It's a PEN.

- 12.3 Megapixels
- Built in IS
- HD Movie
- 3.0" LCD Screen

**E-P2 + 14-42mm £649.99**

**E-P2 + 17mm £699.99**

Please visit our website for even more E-P2 offers!

**Olympus E-450**

Discover the artist in you.

- 10 Megapixels
- AF Live View
- Dust Reduction System

**Body SRP £349.99**

**Body Only £299.00 + 14-42 £349.00**

**Olympus E-620**

Small body & innovative features

- 12.3 Megapixels
- 2.7" LCD Screen
- Dust Reduction System

**Body SRP £515.00**

**Body Only £429.99 + 14-42 £499.99**

**Olympus E-30**

Your portable creative studio

- 12.3 Megapixels
- 2.7" LCD Screen
- Dust Reduction System

**Body SRP £999.00**

**Body Only £729.00 + 14-42 £799.99**

**Olympus E-3**

Your portable creative studio

- 12.3 Megapixels
- 2.7" LCD Screen
- Dust Reduction System

**Body SRP £995.00**

**Body Only £976.99 + 12-60 £1,579.00**



**Olympus E-System Lenses**

8mm f/3.5 ED Fisheye	£689.99
25mm f/2.8 Pancake	£196.99
35mm f/3.5 Macro	£189.99
50mm f/2.0 ED Macro	£569.99
150mm f/2.0 ED	£1,929.00
300mm f/2.8 ED	£5,695.00
7-14mm f/4	£1,399.00
9-18mm f/4.0-5.6	£629.99
11-22mm f/2.8-3.5	£724.99
12-60mm f/2.8-4.0 SWD	£819.00
14-42mm f/3.5-5.6 ED	£99.99
14-35mm f/2.0 ED SWD	£1,735.99
14-54mm f/2.8-3.5 II	£549.00
18-180mm f/3.5-6.3	£419.99
35-100mm f2.0	£1,899.00
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50-200mm f/2.8-3.5 SWD	£979.00
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12.1 MP Compact



Only  
**£119.99**  
SRP £254.99

**Fujifilm F70 EXR**  
10x Optical Zoom



Only  
**£149.99**  
SRP £224.99

**Manfrotto 055CX3**  
Carbon Fibre Tripod



Only  
**£189.95**  
SRP £299.55

For some really great offers, see the clearance section on our website

# Panasonic

Understanding  
Your Lumix G1  
15th September



## Panasonic DMC-G1 + 14-45mm O.I.S

Megapixels	12.1	HD Video	X
LCD Screen	3.0"	FPS	3
Live View	✓	Card Type	SD

The Lumix G1 is both compact and light. In fact, the only reason it isn't smaller is down to ergonomics... you can go too far! These qualities allow the camera to be very portable making it an ideal travelling companion.

**Blue Kit only £359.99\***



## Panasonic DMC-GF1 + 14-45mm O.I.S

Megapixels	12.1	HD Video	✓
LCD Screen	3.0"	FPS	3
Live View	✓	Card Type	SD

By using the Micro Four Thirds System standard and developing a camera body that eliminates the mirror box and optical viewfinder unit, the DMC-GF1 was able to achieve the world's smallest, lightest body as a system camera with a built-in flash.

**Our Price £544.00**

Available in Black, Red or Silver

## Panasonic DMC-G10



Megapixels	10.0
LCD Screen	2.7"
Live View	✓
HD Video	✓
FPS	3.5
Card Type	SD

**Panasonic DMC-G10 + 14-42mm**  
**Our Price £419.00**

## Panasonic DMC-G2



Megapixels	12.1	HD Video	✓
LCD Screen	3.0"	FPS	3.2
Live View	✓	Card Type	SD

**Panasonic DMC-G2 + 14-42mm**  
**Our Price £539.99**

## Panasonic MICRO FOUR THIRDS LENSES

20mm f/1.7 Pancake ASPH	£294.99
20mm f/1.7 Pan (Unboxed)	£289.99
45mm f/2.8 Macro Leica DG	£598.99
7-14mm f/4.0 Asph Lumix G	£914.99
14-140mm Lumix G Vario	£669.99
14-140mm Lumix G (Unboxed)	£669.99
45-200mm f/4.0-5.6 O.I.S	£240.00

For even more Panasonic Lenses and Accessories, please visit us in-store or at [www.ParkCameras.com/DPPhoto](http://www.ParkCameras.com/DPPhoto)

## Panasonic DMW-Bag1

Our Price only £19.99

SRP £79.99

## Panasonic 8GB SD HC

Our Price only £29.99

SRP £64.36

## Panasonic DMW-BLB13E

Our Price only £59.99

SRP £75.99

## Panasonic DMW-LVF1

Our Price only £159.99

SRP £206.99

## Panasonic DMW-FL220E

Our Price only £132.99

SRP £149.99

## Panasonic DMW-FL360E

Our Price only £199.99

SRP £224.99

## Panasonic DMW-FL500E

Our Price only £389.99

SRP £429.99

## Panasonic DMW-MS1E

Our Price only £59.99

SRP £144.99

For even more Panasonic accessories, see our website

## SONY make.believe

There is a full range of Sony Digital SLR cameras, lenses and accessories to help every photographer realise their personal creative vision

**NEW! Translucent Mirror Technology**

## α33

- 14.2 megapixels
- Up to 7fps
- Full HD 1080i Video

Due October 2010  
Pre-Orders taken now

SRP £669.99

**NEW! Translucent Mirror Technology**

## α55

- 16.2 megapixels
- Up to 10fps
- Full HD 1080i Video

Due October 2010  
Pre-Orders taken now

SRP £749.99

**NEW! Translucent Mirror Technology**

## α580

- 16.2 megapixels
- 7fps
- Full HD 1080i Video

Due October 2010  
Pre-Orders taken now

SRP £729.99

**NEW! NEX-3**

- 14.2 megapixels
- MPEG4 720p video
- Sweep Panorama
- 3.0" Tilt-angle LCD

**IN STOCK!!**

See web for latest Low Price!

**NEW! Magnesium body!**

## NEX-5

- 14.2 megapixels
- Full HD 1920x1080i
- Sweep Panorama
- 3.0" Tilt-angle LCD

**IN STOCK!!**

See web for latest Low Price!

**LOW PRICE!**

## α550

- 14.2 megapixels
- SteadyShot INSIDE
- 3.0" LCD Screen

+ 18-55mm £449.00

See Web for details

SRP £759.00

**Sony DSC-H55**

In stock at  
**only £219.99**

SRP £249.99

**Sony Bloggie**

In stock from  
**£109.00**

SRP £179.99

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## EPSON PRINTERS AT PARK CAMERAS

**Stylus Photo PX820 FWD**  
Print, Scan, Copy & Fax from anywhere in the home with this wireless 4-in-1 printer.



**NEW & In Stock!**

SRP £299.99

**Stylus Photo R2880**  
Step into large-format printing with first rate colour & black and white images.



**Only £549.99**

SRP £719.99

**Stylus Photo Pro 3880**  
Big on quality, small in size - to fit your office, your studio and your budget.



**Only £974.99**

SRP £1,144.25

## CANON PRINTERS AT PARK CAMERAS

**PIXMA MP560**  
An advanced All-in-One printer ideal for homes and offices, with built in Wi-Fi.



**Only £139.00**

SRP £155.00

**PIXMA iX7000**  
This is the ultimate A3+ office inkjet ideal for the home or office.



**Only £329.00**

SRP £429.00

**PIXMA Pro 9500 Mk II**  
This A3+ printer produces gallery-quality, long-lasting prints.



**Only £499.99**

SRP £779.00

## SAMSUNG

For the latest in Digital Compact Cameras, Digital Camcorders and the latest TV technology including 3D, please visit us in-store or on-line

**PL-150 Blue / Red / Purple**  
Twice the fun of any camera. Dual LCDs make it easy.

**Only £149.99**

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T0540-549 Set of 6	<b>£102.99</b>	<b>£35.99</b> , 3 sets for <b>£99.99</b>	
T0540 Gloss	<b>£7.99</b> (13ml)	<b>£3.99</b> 21ml, 3 for <b>£13.99</b>	
T0541/2/3/4, each	<b>£13.99</b> (13ml)	<b>£4.99</b> 21ml, 3 for <b>£13.99</b>	Photo R240, R245, RX420, RX425, RX520, RX525
T0547/8/9, each	<b>£13.99</b> (13ml)	<b>£4.99</b> 21ml, 3 for <b>£13.99</b>	Photo R2400
T0551-554 Set of 4	<b>£29.99</b>	<b>£14.99</b> , 3 sets for <b>£42.99</b>	
T0551 Black	<b>£8.99</b> (8ml)	<b>£4.99</b> 21ml, 3 for <b>£10.99</b>	
T0552/3/4, each	<b>£8.99</b> (8ml)	<b>£3.99</b> 21ml, 3 for <b>£10.99</b>	
T0591-599 Set of 6	<b>£94.99</b>	Check Website.	D68, D88, DX3800/3850, DX4200/4250, DX4800/4850
T0591/2/3, each	<b>£11.99</b> (13ml)	Check Website.	
T0594/5/6, each	<b>£11.99</b> (13ml)	Check Website.	S20, S21, SX100/105/110/115/200/205/210/215 SX400/405/415/515, D78/92/126, B40W, SX300 DX4000/4400/5000/6000/7000/7400/8400/9400
T0597/8/9, each	<b>£11.99</b> (13ml)	Check Website.	Photo 1400
T0611-614 Set of 4	<b>£29.99</b>	<b>£14.99</b> , 3 sets for <b>£42.99</b>	
T0611 Black	<b>£8.99</b> (8ml)	<b>£4.99</b> 21ml, 3 for <b>£13.99</b>	Photo P50, R265, R285, R360
T0612/3/4, each	<b>£9.99</b> (8ml)	<b>£3.99</b> 21ml, 3 for <b>£10.99</b>	RX560, RX585, RX685
T0711-714 Set of 4	<b>£29.99</b>	<b>£14.99</b> , 3 sets for <b>£42.99</b>	PX650, PX700/710W, PX800/810FW
T0711 Black	<b>£8.99</b> (7.4ml)	<b>£4.99</b> 13ml, 3 for <b>£13.99</b>	Photo R1900
T0712/3/4, each	<b>£8.99</b> (5.5ml)	<b>£3.99</b> 13ml, 3 for <b>£10.99</b>	
T0791-796 Set of 6	<b>£70.99</b>	Check Website.	
T0791/2/3, each	<b>£11.99</b> (10ml)	Check Website.	Photo R2880
T0794/5/6, each	<b>£11.99</b> (10ml)	Check Website.	
T0801-806 Set of 6	<b>£45.99</b>	<b>£19.99</b> , 3 sets for <b>£57.99</b>	
T0801/2/3, each	<b>£8.99</b> (7.4ml)	<b>£3.99</b> 13ml, 3 for <b>£10.99</b>	
T0804/5/6, each	<b>£8.99</b> (7.4ml)	<b>£3.99</b> 13ml, 3 for <b>£10.99</b>	
T0870-879 Set of 6	<b>£76.99</b>	Check Website.	
T0870 Gloss	<b>£7.99</b> (11.4ml)	Check Website.	
T0871/2/3/4, each	<b>£9.99</b> (11.4ml)	Check Website.	
T0877/8/9, each	<b>£9.99</b> (11.4ml)	Check Website.	
T0961-969 Set of 6	<b>£78.99</b>	Not Available.	
T0961/2/3, each	<b>£9.99</b> (11.4ml)	Not Available.	
T0964/5/6, each	<b>£9.99</b> (11.4ml)	Not Available.	
T0967/8/9, each	<b>£9.99</b> (11.4ml)	Not Available.	
T5591-6 Set of 6	<b>£61.99</b>	Not Available.	
T5591/2/3, each	<b>£11.99</b> (13ml)	Not Available.	
T5594/5/6, each	<b>£11.99</b> (13ml)	Not Available.	

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EPSON Stylus Pro 4000, 4400, 7600, 9600	
T5431/5432/5433/5434/5435/5436/5437/5438 110ml each	<b>£44.99</b>
T5441/5442/5443/5444/5445/5446/5447/5448 220ml each	<b>£69.99</b>
EPSON Stylus Pro 4800, 4880:	
T6051/6052/6053/6054/6055/6056/6057/6138/6059 110ml	<b>£44.99</b>
T6061/6062/6063/6064/6065/6066/6067/6148/6069 220ml	<b>£69.99</b>
EPSON Stylus Pro 7800, 7880, 9800:	
T6021/6022/6023/6024/6025/6026/6027/6118/6029 110ml	<b>£44.99</b>
T6031/6032/6033/6034/6035/6036/6037/6128/6039 220ml	<b>£69.99</b>

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CL18 PC/PM 15ml	<b>£4.99</b>
PG1520 Black 19ml	<b>£5.99</b>
CL1521 B/C/M/Y/G 9ml	<b>£4.99</b>
BC110 Black (3 pack)	<b>£4.99</b>
BC115 Black (2 pack)	<b>£4.99</b>
BC115 Colour (2 pack)	<b>£5.99</b>
BC124 Black 9ml	<b>£1.99</b>
BC124 Colour 15ml	<b>£2.99</b>
PG37 Black 12ml	<b>£9.99</b>
PG50 Black 28ml	<b>£12.99</b>
CL38 Colour 12ml	<b>£12.99</b>
CL51 Colour 24ml	<b>£14.99</b>

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No.15 Black 46ml	<b>£4.99</b>
No.21 Black 10ml	<b>£7.99</b>
No.22 Colour 21ml	<b>£11.99</b>
No.45 Black 45ml	<b>£4.99</b>
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No.57 Colour 24ml	<b>£12.99</b>
No.58 Photo 24ml	<b>£12.99</b>
No.78 Colour 45ml	<b>£9.99</b>
No.88XL B/C/M/Y each	<b>£9.99</b>
No.110 Colour 12ml	<b>£10.99</b>
No.300XL Black 18ml	<b>£14.99</b>
No.300XL Colour 18ml	<b>£16.99</b>
No.336 Black 10ml	<b>£7.99</b>
No.337 Black 24ml	<b>£10.99</b>
No.338 Black 24ml	<b>£10.99</b>
No.339 Black 34ml	<b>£12.99</b>
No.342 Colour 12ml	<b>£10.99</b>
No.343 Colour 21ml	<b>£12.99</b>
No.344 Colour 21ml	<b>£14.99</b>
No.348 Photo 21ml	<b>£12.99</b>
No.350XL Black 30ml	<b>£14.99</b>
No.351XL Colour 20ml	<b>£16.99</b>
No.363 Black 20ml	<b>£6.99</b>
No.363 C/M/Y/PC/PM each	<b>£4.99</b>
No.363 Set of 6	<b>£24.99</b>

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No.3 Black	<b>£14.99</b>
No.16 Black	<b>£10.99</b>
No.17 Black	<b>£9.99</b>
No.26 Colour	<b>£12.99</b>
No.27 Colour	<b>£11.99</b>
No.31 Photo	<b>£11.99</b>
No.32 Black	<b>£9.99</b>
No.33 Colour	<b>£11.99</b>
No.34 Colour	<b>£11.99</b>
No.35 Colour	<b>£12.99</b>

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No.23 Black	<b>£14.99</b>
No.24 Colour	<b>£16.99</b>
No.27 Colour	<b>£14.99</b>
No.28 Black	<b>£13.99</b>
No.29 Colour	<b>£14.99</b>
No.31 Photo	<b>£24.99</b>
No.32 Black	<b>£15.99</b>
No.33 Colour	<b>£17.99</b>
No.34 Black	<b>£20.99</b>
No.35 Colour	<b>£24.99</b>
No.36 Black	<b>£16.99</b>
No.37 Colour	<b>£18.99</b>
No.43 Colour	<b>£22.99</b>
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No.38 C/M/Y/PC/PM 27ml	<b>£26.99</b>
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No.57 Colour 19ml	<b>£24.99</b>
No.58 Photo 17ml	<b>£22.99</b>
No.59 Grey 17ml	<b>£22.99</b>
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No.110 Colour 5ml	<b>£18.99</b>
No.300 Black 4ml	<b>£10.99</b>
No.300XL Black 11ml	<b>£22.99</b>
No.300 Colour 4ml	<b>£12.99</b>
No.300XL Colour 11ml	<b>£26.99</b>
No.337 Black 11ml	<b>£17.99</b>
No.338 Black 11ml	<b>£17.99</b>
No.339 Black 11ml	<b>£24.99</b>
No.343 Colour 7ml	<b>£18.99</b>
No.344 Colour 21ml	<b>£26.99</b>
No.350 Black 4.5ml	<b>£11.99</b>
No.350XL Black 25ml	<b>£25.99</b>
No.351 Colour 3.5ml	<b>£13.99</b>
No.351XL Colour 14ml	<b>£27.99</b>
No.363 Black 6ml	<b>£8.99</b>
No.363 C/M/Y/PC/PM each	<b>£9.99</b>
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LC970 C/M/Y	<b>£2.99</b>
LC970 Set of 4	<b>£11.99</b>
LC1000 Black	<b>£3.99</b>
LC1000 C/M/Y	<b>£2.99</b>
LC1000 Set of 4	<b>£11.99</b>
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LC980 / 1100 C/M/Y	<b>£2.99</b>
LC980 / 1100 Set of 4	<b>£11.99</b>

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- 2) A filter holder clips onto the ring
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62mm Rubber Hood	£4.99
67mm Rubber Hood	£4.99
72mm Rubber Hood	£5.99
77mm Rubber Hood	£5.99

### Lens Caps

30mm, 37mm, 40mm, 43mm, 46mm, 49mm, 52mm, 55mm, 58mm, 62mm, 67mm, 72mm, 77mm, 82mm, 86mm, 95mm

£3.99 each

We also stock a range of body caps and rear lens caps for Canon, Nikon, Olympus, Sony, Pentax, etc

## SPIRIT LEVELS

### Bubble Spirit Levels

These simply mount onto the hot shoe of a DSLR camera.

Twin Axis Normal Hotshoe	£7.99
Twin Axis Sony Hotshoe	£7.99
Triple Axis Normal Hotshoe	£9.99
Triple Axis Sony Hotshoe	£9.99

### Seculine Digital Spirit Level

A digital spirit level that mounts onto the hot shoe in the usual manner, and uses LEDs to confirm when the camera is perfectly level.

£29.99

## CLEANING

### Sensor Cleaning - DRY

Sensor Loupe TX with LED	£54.95
ZEIION Anti-static Blower	£37.95
SL700 Arctic Butterfly	£52.95

### Sensor Cleaning - WET

Cleaning Solution (7.5ml)	£15.99
Cleaning VSwabs (12)	£29.99
EZ Kit (1ml Solution, 4 Swabs)	£14.99

### Camera / Lens Cleaning

Kenair Master Kit	£13.99
Kenair Spare Aerosol	£7.99
LensPen Original	£9.99
Spudz 6x6 inch	£4.99
Spudz 10x10 inch	£6.99
Kood Hurricane Blower	£3.99
Camlink 5-in-1 Clean Kit	£3.99

Massive range of cleaning equipment on our website and in stock.

## SCREW-TYPE FILTERS

### KOOD

Japanese Optical Glass Filters

Coated to reduce lens flare and reflections.

#### UV / Haze Filters

Used both to protect the lens of your camera, and to absorb ultraviolet rays that can cause photos to appear hazy.

46mm UV / Haze	£5.99
52mm UV / Haze	£5.99
55mm UV / Haze	£6.99
58mm UV / Haze	£7.99
62mm UV / Haze	£8.99
67mm UV / Haze	£9.99
72mm UV / Haze	£11.99
77mm UV / Haze	£14.99
82mm UV / Haze	£17.99
86mm UV / Haze	£22.99

More sizes in stock, from 24 to 86mm!

#### Circular Polarising Filters

These remove reflections from surfaces such as glass and water, as well as increasing contrast and saturation.

46mm Circular Polarizing	£17.99
52mm Circular Polarizing	£17.99
55mm Circular Polarizing	£19.99
58mm Circular Polarizing	£21.99
62mm Circular Polarizing	£24.99
67mm Circular Polarizing	£27.99
72mm Circular Polarizing	£34.99
77mm Circular Polarizing	£39.99
82mm Circular Polarizing	£44.99
86mm Circular Polarizing	£49.99

More sizes in stock, from 27 to 86mm!

#### Skylight Filters

Similar to a UV filter, but with a pinkish tinge to add a gentle warmth to your photos.

52mm Skylight	£6.99
55mm Skylight	£7.99
58mm Skylight	£8.99
62mm Skylight	£9.99
67mm Skylight	£10.99
72mm Skylight	£12.99
77mm Skylight	£15.99

More sizes in stock, from 30 to 105mm!

#### Close Up Filter Sets

Sets containing three filters, rated at +1, +2, and +4 diopters. Increases close up / macro ability of the lens they are fitted to.

52mm Close-Up Set	£25.99
55mm Close-Up Set	£28.99
58mm Close-Up Set	£32.99

More sizes in stock, from 45 to 77mm!

#### Lens Converters

Ideal for converting your kit lens to a 2.0X telephoto or 0.5X wide angle lens.

52mm 2.0X or 0.5X converter	£35.99
55mm 2.0X or 0.5X converter	£37.99
58mm 2.0X or 0.5X converter	£39.99

#### Starburst Filters

These add a dramatic star cross flare to bright light sources, such as streetlights. They also give a slight soft focus effect.

52mm Starburst x4/6/8, each	£11.99
58mm Starburst x4/6/8, each	£15.99
67mm Starburst x4/6/8, each	£21.99
72mm Starburst x4/6/8, each	£27.99

More sizes in stock, from 46 to 82mm!

#### Starburst Filters

We stock many other filter types, including multi-image, fog, split-field, red, orange, yellow and green filters in a range of sizes.

### FaderND

Lord of the DARK

#### LightCraftWorkshop FaderND Filters

Amazing but true - by simply rotating the outer element of the filter, the amount of light passing through the filter can be adjusted from a 2 stop to an 8 stop reduction. The FaderND filter is constructed from two opposing sheets of polarizing glass, the outer sheet mounted in an independently rotating frame. The new Mk II version features both improved optical elements, and a thinner, conical shaped frame to reduce the chance of vignetting.

#### FaderND MkII (2-8 stop)

52mm FaderND MkII	£56.99
55mm FaderND MkII	£59.99
58mm FaderND MkII	£62.99
62mm FaderND MkII	£69.99
67mm FaderND MkII	£79.99
72mm FaderND MkII	£89.99
77mm FaderND MkII	£99.99

#### ND500MC (fixed 9 stop)

77mm ND500MC	£64.99
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Genuine LightCraftWorkshop filters - beware of imitations!

## STEPPING RINGS

### Step-Up and Step-Down Rings

Stepping rings are used to 'step-up' or 'step-down' from one filter thread size to another.

34-37mm	52-55mm	58-55mm	67-62mm
37-43mm	52-58mm	58-62mm	67-77mm
43-46mm	55-52mm	58-67mm	72-67mm
46-49mm	55-58mm	62-67mm	72-77mm
49-52mm	58-52mm	62-72mm	77-72mm

All just £4.99 each!

*This is just a tiny fraction of our range. Over 160 different sizes in stock, from 25mm to 105mm. Probably the largest selection in the UK!*

## MACRO PHOTOGRAPHY

### Reversing Rings - £12.99

These fit to the camera body, between the camera and lens, leaving a screw thread to enable the reverse mounting of lenses. A way of obtaining a high reproduction ratio, allowing extreme Macro photography.

Canon: 52, 55, 58, 62, 67mm  
Nikon: 52, 55, 58, 62, 67mm  
Pentax K: 52, 55, 58, 62, 67mm  
Olympus: 52, 55, 58, 62, 67mm  
Sony: 52, 55, 58, 62, 67mm

### Extension Tubes

Set of 3 tubes. They contain no optics, they simply move the lens further from the camera body, allowing closer focusing. Autofocus tubes available in Canon, Nikon and Sony fittings - manual tubes are also available in Pentax and Olympus fittings.

Manual Focus Tubes £17.99  
Autofocus Tubes £129.99

### Extension Bellows

Acting like an adjustable set of extension tubes, they allow fine control over focusing distance. Nikon, Canon and Pentax fit.

£49.99

### Coupling Rings - £11.99

Used to attach two lenses together via their filter threads, achieving high magnifications

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55-55mm, 55-58mm, 58-58mm	

### T2 Mounts - £12.99

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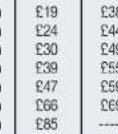
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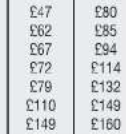
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62mm	£35	£55
67mm	£40	£93
72mm	£49	£95
77mm	£50	£99
82mm	£49	£123
86mm	£99	£132
95mm	£85	£125
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	UV		Circ Pol
49mm	£14	£36	£68
52mm	£16	£37	£68
55mm	£17	£36	£70
58mm	£19	£38	£80
62mm	£24	£44	£85
67mm	£30	£49	£94
72mm	£39	£55	£114
77mm	£47	£59	£132
82mm	£66	£69	£149
86mm	£85	£149	£160
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BG-E5.....£79	G18 Ext Tube Box.....£99	503CW chr + 80 CF	150 F4 mint box.....£299	500 F4 AFS scruffy.....£2999	18-55 F3.5/5.6.....£49
WFT-E4.....£169	G36 Ext Tube Box.....£99	+ A12 chr or blk.....£1399	180 F4.5 KL mint.....£299	400 F2.8 AFSII.....£4999	28-70 F2.8 FA AL.....£499
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<b>FUJI</b>	Pro shade inc 82mm.....£49	+ A12 + prism.....£1499	Ext tube 1 or 2 each.....£69	TC20EII.....£259	50-200 F4.5/6 VR M.....£399
S5 body box.....£499	Polaroid Back.....£39	503CX body.....£799	Ext tube 45 mint box.....£99	TC20E.....£189	50-200 F4.5/6 M.....£89
S3 body box.....£329	Speed Grip.....£89	503CX body.....£799	Telesup 2x conv.....£59	<b>SIGMA NAF</b>	55-200 F4.5/6 D AL.....£149
S2 body box.....£199	AE Prism Finder G.....£129	503CX body.....£799	Multi angle prism.....£59	15-30 F4.5/5.6 DC.....£329	55-200 F4.5/6 D ATX199
<b>MINOLTA/SONY</b>	AE Prism Prism.....£299	503CX body.....£799	<b>MAMIYA R2 6x7</b>	15-30 F3.5/4.5 DG M-E269	<b>SIGMA PKAF</b>
Sony A850 M-box.....£1199	<b>CANON AF</b>	503CX body.....£799	RZ Pro D + 110	17-35 F2.8/4 EX DG.....£199	17-35 F2.8 EX DG.....£199
Sony A700 body.....£379	EOS 5 body.....£149	503CX body.....£799	+ RFFH M.....£999	18-20 F2.8 EX DC Mac.....£229	30 F1.4 EX DC M.....£399
Sony N50 (A100) p/oe2249	EOS 5 body.....£149	503CX body.....£799	RZ67 Pro II inc 110	18-20 F2.8 EX DC Mac.....£229	50-150 F2.8 II DC.....£269
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D3 body Mint box.....£2399	EOS 600 or 500 body.....£39	503CX body.....£799	RZ Pro II body.....£349	28-70 F2.8 non EX.....£99	COSINA 100-400.....£149
D3 body box.....£2199	EOS 500N or 50E body.....£39	503CX body.....£799	RZ Pro body.....£199	28-200 F3.8/5.6.....£49	<b>PENTAX 35mm MF</b>
D200 body.....£429	17 F4 L TSE mint.....£1649	503CX body.....£799	50 F4.5.....£249	28-200 F3.8/5.6.....£49	LX + FA1.....£249
D80 body box.....£349	17-40 F4 L box.....£449	503CX body.....£799	250 F4.5.....£199	30 F1.4 EX DC box.....£319	K1000 chr body.....£89
D70s body.....£239	17-85 F4.5/6 EFS.....£239	503CX body.....£799	No 1 ext tube.....£99	30 F1.4 EX DC scruffy.....£199	PXN chr body nice.....£69
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E620 + 25 F1.8 M.....£499	28-135 F3.5/5.6 U IS.....£199	503CX body.....£799	45CL4 A.....£69	105 F2.8 EX M.....£289	645N body.....£399
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FL14 flash (Pen).....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	Dyn 7 BVO M Box.....£199	170-500 F5.6 DG.....£399	645N body.....£399
FL14 flash.....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	Dyn 7 Body.....£149	170-500 F5.6 DG.....£399	645N body.....£399
HLDS box.....£59	50 F2.5 mac M-box.....£189	503CX body.....£799	Dynax 800SI body.....£199	170-500 F5.6 DG.....£399	645N body.....£399
HL2 + batt + charg.....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	Dynax 700SI body.....£199	170-500 F5.6 DG.....£399	645N body.....£399
<b>PANASONIC</b>	50 F2.5 mac M-box.....£189	503CX body.....£799	Dyn 600SI QD body.....£79	170-500 F5.6 DG.....£399	645N body.....£399
14-45 F3.5/5.6.....£189	50 F2.5 mac M-box.....£189	503CX body.....£799	Dynax 300SI body.....£269	170-500 F5.6 DG.....£399	645N body.....£399
<b>PENTAX</b>	50 F2.5 mac M-box.....£189	503CX body.....£799	Sony 18-70 F3.5/5.6.....£69	170-500 F5.6 DG.....£399	645N body.....£399
K7D body M-box.....£679	50 F2.5 mac M-box.....£189	503CX body.....£799	18-70 F3.5/5.6.....£69	170-500 F5.6 DG.....£399	645N body.....£399
1st IDS body box.....£149	50 F2.5 mac M-box.....£189	503CX body.....£799	28-80 F3.5/5.6 AF D.....£29	170-500 F5.6 DG.....£399	645N body.....£399
DBG1.....£49	50 F2.5 mac M-box.....£189	503CX body.....£799	28-80 F4.5/6 AF.....£39	170-500 F5.6 DG.....£399	645N body.....£399
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Nature Trekker AW.....£79	50 F2.5 mac M-box.....£189	503CX body.....£799	35-80 F4.5/6.....£29	170-500 F5.6 DG.....£399	645N body.....£399
Photo Trekker AWII.....£169	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
<b>LARGE FORMAT</b>	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Cambo SC Monorail 5x4	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
(with standard rail).....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Linhof Carden	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Supercolour.....£POA	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Linhof Super Angulon	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
65 F5.6.....£POA	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Linhof Super Angulon	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
90 F5.6.....£POA	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Linhof Symar 150 F5.6.....£199	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Linhof Symar 210 F5.6.....£199	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Polaroid 545 Pro F4.....£79	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Polaroid 545i Back.....£79	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Polaroid 545 Back.....£69	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
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ETRS comp M-box.....£329	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
ETRS comp.....£249	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
ETRS comp.....£179	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
40 F4 PE.....£149	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
40 F4 E.....£149	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
45-90 F4.5/6 PE.....£379	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
50 F2.8 E.....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
50 F2.8 PE.....£199	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
75 F2.8 PE.....£129	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
100-220 F4.8 M.....£549	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
150 F3.5 E.....£199	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
150 F3.5 PE M-Box.....£179	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
200 F4.5 E.....£149	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
200 F4.5 PE M.....£249	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
E14 or E28 ext tube.....£49	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Auto 120 RPH.....£49	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Polaroid Back.....£39	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
AEIII Prism.....£199	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
AEII Prism.....£99	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
WLF Boxed.....£59	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Plain Prism E.....£69	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Speed Grip.....£49	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
Metz SCA 386.....£49	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
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SQAI comp M-box.....£499	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
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SQAI body.....£149	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
SQAI Body Boxed.....£299	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
50 F3.5 PS.....£249	50 F2.5 mac M-box.....£189	503CX body.....£799	50 F2.8 Macro 1:1.....£179	170-500 F5.6 DG.....£399	645N body.....£399
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Tamron 28-300mm F3.5-6.3 XR	E++ £159
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**Nikon Manual - Please Phone**

**Olympus**

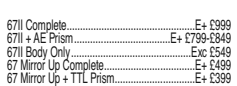


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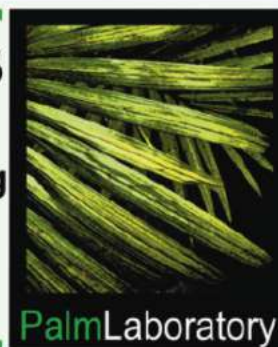
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# ROGER HICKS

**Photography is the tool that could enrich the poor and help the whole world get along**

**IF YOU** possibly can, get hold of Robert Roberts' *The Classic Slum*, an account of growing up in the early 20th century in Salford, Greater Manchester. It is a perversely cheering book, in that it shows very clearly that while dire poverty may still exist in Britain, it is rarely as dire, and nothing like as widespread, as was the case a century ago. The title, incidentally, is a direct quote from Engels on the subject of Salford.

Yet the underlying positive message, that things have indeed got better for the vast majority of people, can mask something else that Marx and Engels felt quite strongly about: class struggle.

Once again, this isn't what it was. We may still bemoan the inequality of opportunity between rich and poor, but the famous London triumvirate of photographers – Bailey, Duffy and Donovan – illustrate well that there is a good deal more class mobility than there was.

Surprisingly, many photographers still come from well-to-do, middle-class backgrounds, but so long as there are any from working-class backgrounds, there is hope.

Or is there? It's true that the (relatively) poor can afford to buy far more things than they could, but equally, there are far more things for them to buy. Until comparatively recently – certainly well into the 1950s, and probably through the 1960s as well – most working-class Britons walked to work, or perhaps travelled by bus, especially outside London. Now, for many people in many jobs, private transport is all but essential in order to get to work. Likewise, as recently as the 1960s, it was by no means taken for granted that everyone had a telephone at home, and a mobile phone in everyone's pocket is very much a phenomenon of the very late 20th century and early 21st.

Also, in a world of spasmodic but relentless inflation, bank failures and financial speculation, it is ever more difficult to save for one's old age – and this is where life can become unduly interesting. Only the very rich can afford to do it, and there is in many countries an ever-widening gap between rich and poor. Globally, the gap is growing even faster. This is not a recipe for political stability, nationally or (worse still) internationally.

All this was prompted by a fascinating lecture I

heard recently, which suggested that derivatives and spread betting have become so popular because there are not enough other places for capital to go. The perpetual real growth that characterised capitalism is no longer possible in the developed world, because rich markets are approaching saturation and poor markets can't afford the sort of goods with which rich markets are saturated. They need basic products they can afford, rather than highly evolved ones that they can't. In other words, certain kinds of consumer goods are going to have to be reinvented in order for

capitalism in any form to continue. To those who say that capitalism in any form is bad, all I can say is, it's like democracy: it's the least worst system we have discovered to date.

How can photography help with all this? Quite surprisingly easily, I'd suggest. Once again, it is digital photography that could be of most use,

because you need so little in the way of infrastructure or consumables.

The so-called '\$100 computer' is already transforming life in much of Africa and in many poor countries on other continents. Children walk miles to school because they know it's their future. But an important part of everyone's future, worldwide, is going to be getting along with one another – and the more we know about each other, the easier we are likely to find it to get along. What I therefore propose is something like a '\$10 [digital] camera', with non-removable storage media and wireless linkage to the \$100 computer (which is already wireless-equipped).

In the hands of the same children who are using the \$100 computer, and in the hands of their parents, and in the hands of the rich countries, too, the \$10 camera would be an unparalleled tool for spreading understanding via the internet, unmediated by professional propagandists or authoritarian governments. Schools, clubs, Scout troops, just about any group could 'twin' with other groups, exchanging visual information about how they live. What is on your dinner plate? Where do you get your water? What do you look like? What games do you play? How many brothers and sisters do you have?

In a sense, if you've no clean water, the \$10 camera is a luxury. But if it helps you to get clean water, and keep it, maybe it's not such a luxury after all. **AP**

**Roger Hicks** is a much published author on photography. He has written more than three dozen books on the subject, many in partnership with his wife Frances Schultz. He has been a freelance photographer/writer since 1981, contributing to many magazines. Visit his website at [www.rogerandfrances.com](http://www.rogerandfrances.com).

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# Welcome

Although I've always been the outdoor type, I love spending time at my computer editing images. After a day's shooting, I really enjoy being able to go through my images, reliving the moment of capturing them and deciding which ones have worked best. I love the immediacy of shooting digitally and the fact that I can tinker with my images within a few minutes of walking through the front door. I usually shoot knowing how I want the final image to look and it's fantastic to be able to make it happen before my eyes on the computer screen. One of the great things about editing images digitally is that there are always new treatments to try and there's usually more than one way of applying them.

In this supplement, we've gathered together 101 tips to help you get more from your digital-editing software. Whether you use the latest version of Adobe Photoshop, Elements 8, Lightroom 3 or Corel PaintShop Photo Pro X3 or another package, we have some tricks that can help with image editing. We have advice on everything, from making the importing process more efficient to ensuring your prints look as they should once you've finished making adjustments. On page 22 you'll also find a list of shortcuts that can speed up the editing process. Don't try to learn them at once, but aim to use one or two new ones every day and you will soon notice the difference. **Angela Nicholson**

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# Managing your images

It is surprising just how quickly an image library can be built up to contain thousands of files, but here are a few things you can do to make your collection easier to manage

## 1 SYNCHRONISE FOLDERS FOR EASIER UPDATING

Keep your Adobe Photoshop Lightroom library up to date by synchronising the folders within the library with those on your hard disk. To do this, simply right-click on the folder in the Lightroom Library module and select Synchronise folder. This will update your Library with any new or updated images found within the folder on the hard drive, and will delete any images from the library that are no longer there.

## 2 KEYWORD IMAGES WHEN IMPORTING THEM

A lot of time can be saved by adding general keywords when images are imported. More specific words can be added to individual images later.

## 3 ORGANISE FOLDERS

Keep images organised by placing them in a suitable hierarchy of folders. For example, you may have a series consisting of a folder and subfolders named My Pictures>Holidays>2010>Spain, or My Pictures>Portraits>Bloggs, Joe. This will make it easy to find a particular series or type of image.

## 4 SET COPYRIGHT INFO AT IMPORT

As well as key-wording images at import, copyright information can be added in most image library software. Adding your name and email address will help protect your images if you plan to put them online.

## 5 IMPORT A BACKUP COPY

When importing images from your camera's memory card, some software has the option to import the image files to two locations. Use this to guarantee that you have a backup copy of all your original files on an external hard disk.

## 6 ORGANISE IMAGES IN LIGHTROOM BY USING COLOUR LABELS AND FLAGS

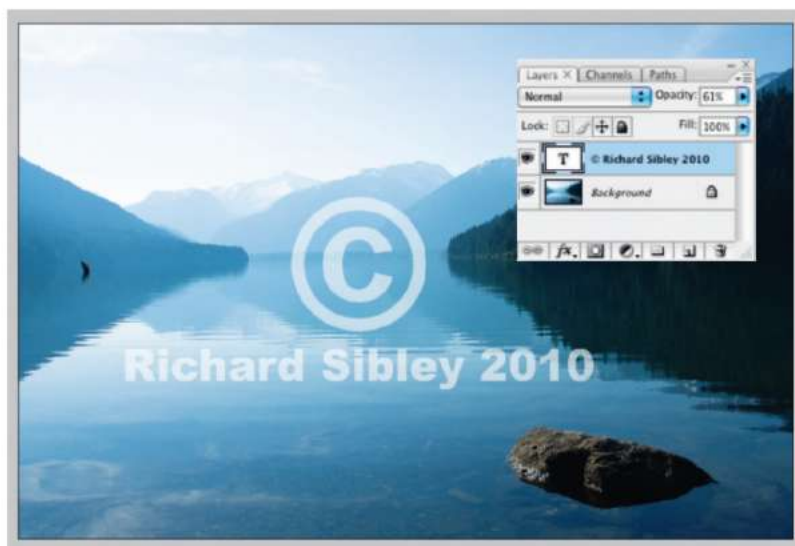
As well as giving images a star rating, you can colour code them in Adobe Photoshop Lightroom. For example, an image that is tagged red may be completely unedited, a blue image may need a spot of retouching, while a green image may be ready for print. Use these colour tags to keep track of what stage you are at in the image-editing process.

## 7 USE AN EXTERNAL HARD DRIVE FOR IMAGES

Save all your images to a dedicated external hard disk drive. This will make it easier to find your images and will save space on your computer's main hard disk drive.

## 8 KEEP A BACKUP

Hard disk drives can fail, so it is strongly recommended that you use a second disk drive to regularly back up all your images.



## 9 CREATE A WATERMARK

If you plan to upload your images online, it may be advisable to add a watermark that will deter other people from using the image on their own site. If you sell the occasional print, it is also advisable to add a watermark across the middle of any proof prints to deter people from scanning and printing the image themselves.

In most image-management software, watermarks can be added to images as they are exported, or you can add them manually using editing software. The best way to do this is to create a new layer above the image and use a text tool to write your name or place a copyright symbol very prominently over it. Then change the opacity of the watermark to around 30% so that it is still visible but doesn't detract too much. If you have to add watermarks to a number of images, it is worth saving this task as an Action (see Tip 76, Create an Action, on page 18).



## 10 USE SAVE AS TO PRESERVE ORIGINAL IMAGES

After editing an image, use your editing software's Save As function to save a copy. Apply a suffix such as 'edit' to distinguish the edited version from the original. This will ensure you always have the original, unedited file to return to in the future.

## 11 PRESERVE ADJUSTMENT LAYERS BY SAVING AS A PSD FILE

When images are saved as JPEG files, any layers will be merged to flatten the image. To preserve these layers so you can revisit them, save your images as Photoshop PSD files, or as TIFF files with the Preserve Layers option selected.

## 12 RATE IMAGES

Most image library and catalogue software, including Adobe Bridge, Lightroom and Apple Aperture, allow images to be rated out of five. Use this feature to rate all your images, with 5\* ones being among the best you have taken, 3\* being average and 1\* being those you could happily delete. You can then filter the images to see just the 1\* rated ones to delete them, and show off your very best work by showing only your 5\* versions.

## 13 DELETE THE RUBBISH

It may seem obvious, but make sure you delete any useless images to save space and keep your image library neat and tidy. Use the star-rating system to quickly find the 1\* images you can delete from your hard drive.

## 14 RENAME IN BATCHES

File names generated by cameras can become confusing when you have to search for a particular image on your computer. Instead of using these generic file names, rename images either when they are imported or by performing a batch rename.

Adobe Bridge allows you to perform a batch rename extremely quickly. Simply select all the images to rename, then right-click on one of them and select Batch Rename. A new window will open that will allow you to apply a name to the images. The simplest way to name an image is to choose some appropriate text – London, for example – then select the Date/Time

option, which will add the date that the image was taken from the image metadata, and finally select Sequence Number. This should produce a filename for each image that looks something like 'London 11082010 001'.

## 15 USE SEARCH FILTERS TO FIND THE IMAGE YOU NEED

As well being able to search for images by using a file name or a particular keyword, most image-library software will allow you to filter images using an image's metadata.

Hidden in each image file is a host of information, from the exposure settings to the particular camera and lens that were used to take it. If you or your camera has added GPS location data, then you can even use this to search for images of a particular location.

So, if you are looking for any night-time landscape shots you have taken, simply filter to show only images that have long exposure times.

## 16 CREATE A CONTACT SHEET

Image browsers can help you view thumbnails on screen, but if you are archiving prints or creating an album, a contact sheet-style page of thumbnails may be useful.

Adobe Photoshop Lightroom, Apple Aperture, ACDsee and PaintShop Photo Pro allow you to quickly and easily select images and create customised pages of thumbnail images. In Photoshop you can create a contact sheet by selecting File>Automate>Contact Sheet.

In Adobe Photoshop Elements you can create a contact sheet by going to the Create Module and then selecting your paper size and a layout that allows 16 images to be shown on one page.





# Optimising software

Editing large image files can put a strain on your computer, but there are a few things you can do to improve performance and speed up the process

## 17 CUSTOMISE AND SAVE YOUR WORKSPACE

Most editing software has a range of default workspaces that display a selection of toolbars and palettes. However, it is always preferable to create a workspace that is suited to the way you work and the size of screen you use. Set up all the tool bars and palettes to the location you want them and then, in Adobe Photoshop or Bridge, select Window>Workspace>Save Workspace. This workspace will then be saved, and can be loaded and used in the future as your default workspace when editing images.

## 18 DISCARD UNUSED PREVIEW FILES

To speed up image browsing, most image-library software creates preview images of every photo imported into it. However, over time these can take up a lot of space on your hard drive. In Adobe Photoshop Lightroom there is an option in the Catalog Settings to Discard 1:1 preview files after a certain number of days. This will delete any preview images created before this time, saving space on your hard drive and potentially improving the performance of the software.

When you click on an image without a preview file, Lightroom will start to create a new one, so don't worry about setting Lightroom to periodically delete these files.

## 19 DELETE OLD LIGHTROOM BACKUPS TO SAVE SPACE

Over time, the backup files created by Adobe Photoshop Lightroom can take up a lot of space. However, unwanted backups can be deleted. The files are found in the folder under My Pictures>Lightroom>Backups and are named with the date and time that the backup was created. You must delete these files manually from within Windows or Mac OS. Always keep the latest two backup files so you can go back and restore these should your working catalogue file become damaged or corrupt.

## 20 INCREASE VIRTUAL MEMORY

Virtual memory is the allocated space on your hard drive that temporarily stores data if the computer's Random Access Memory (RAM) is full. Performance can often be enhanced by increasing the amount of space allocated. The minimum amount of virtual memory should be at least 250% the amount of physical RAM, so if you have 2GB of RAM in your computer increase the amount of virtual memory to 5GB or more.

In Windows XP the virtual memory can be altered via Control Panel>Performance and Maintenance>System>Advanced>Performance and then clicking on Settings. On the Advanced Tab select Virtual Memory and under the Paging File Size click on Custom size. Now enter the amount you wish to increase the virtual memory to.

In Windows Vista, the virtual memory can be adjusted by selecting Start>Control Panel>System and Maintenance>System>Advanced System Settings>Performance>Settings, and then select Change under the Virtual Memory option.

Using an external drive as a scratch disk can improve software performance



## 21 OPTIMISE YOUR LIGHTROOM LIBRARY

Lightroom's image catalogue is a database file that contains all the information about the location of image files and the changes that have been applied to them, not to mention details of virtual files and preview files. As the library grows, this database can start to become bloated. Thankfully, Lightroom contains a feature to optimise the catalogue file. This is found under Edit>Catalog Settings on a PC and in File>Optimise Catalog on a Mac. Once selected, Lightroom will automatically optimise the data contained within the catalogue file. Make sure you create a backup of your catalogue file first.

## 22 INCREASE THE AMOUNT OF RAM USED BY ADOBE PHOTOSHOP AND ELEMENTS

Data that is needed while software is running is saved to a computer's RAM. If you are working on a number of images, or are editing an image that contains a lot of layers, it is beneficial to keep as much RAM free as possible. By default, Photoshop uses 70% of the available RAM, leaving the other 30% to be used by the computer's operating system or any other programs that may be running.

You can increase the amount of RAM being used by Photoshop or Elements by going to Edit>Preferences>Performance. Move the slider to the right to increase the amount of RAM used. It is best to leave some memory for other applications and for the operating system. Increase the RAM to 90%, which should offer a noticeable improvement in Photoshop's performance.

## 23 DISABLE YOUR VIRUS CHECKER

Virus checkers use a lot of system resources and can slow your computer. When editing images, disconnect from the internet and



## 'Software plug-ins add new features to your existing image-editing software'

turn your virus checker off to help improve your computer's performance.

## 24 USE PLUG-INS

Software plug-ins add new features, such as intelligent masking and noise reduction, to your existing image-editing software. Most plug-ins are produced by third-party companies, such as onOne Software ([www.ononesoftware.com](http://www.ononesoftware.com)), and there are hundreds of types available for Photoshop, Elements, Lightroom and PaintShop Photo Pro. Look for plug-in files that may help to speed up certain tasks that you perform regularly, or which add a new feature to your existing software. There are a number of plug-ins available for Photoshop Elements that add features which would otherwise only be found in the full version of Photoshop, such as Layer Masks.

## 25 USE AN EXTERNAL DRIVE AS A SCRATCH DISK

Both Adobe Photoshop and Elements can use something called a scratch disk.

This is a hard disk that is temporarily used by Photoshop or Elements when it needs to save information that is too large to be stored in the RAM. It will write the information to temporary files, the hard drive and then delete it automatically once it has finished using it.

A scratch disk can be selected by going to Edit>Preferences>Performance. This should show the available hard disk drives and the free space on them. It is advisable not to use a computer's main hard drive as the scratch disk otherwise this will be used to run the operating system and Photoshop itself. For best results, use an external hard drive with a fast USB 2.0 or FireWire connection. By not using the computer system's hard drive, you should notice a slight increase in performance.

## 26 USE PHOTOSHOP'S TILE FEATURE, AND MATCH ZOOM AND LOCATION OF MULTIPLE IMAGES

To compare several open images in Adobe Photoshop, select Window>Arrange>Tile Horizontally (or Vertically) and then Window>Arrange>Match Zoom and Location. This should now display the images side by side at the same magnification, showing the same part of the image. Use the Zoom tool set to Zoom All Windows to zoom in and out of both images at the same time, and use the Hand tool, with Scroll All Windows selected, to move both images around to check details.

## 27 PERFORM DUST REMOVAL ON MULTIPLE IMAGES

If a number of your images have dust marks in the same place, you can remove them from all the images in one go. In Adobe Photoshop Lightroom, Camera Raw or Apple Aperture, use the Spot Removal tool to remove the dust mark from one image. Now select all the other affected images and choose the Sync option in Lightroom or Camera Raw. In Aperture, right-click on the image, choose the Lift Adjustments option and then highlight the images from which you wish to remove the dust. Right-click on one of the selected images and click Stamp Adjustments to perform the same dust-removal adjustment on the selected files.

## 28 TARGET ADJUSTMENTS IN LIGHTROOM AND CAMERA RAW

Adobe Camera Raw 5 and above, as well as Lightroom, allows you to target tones within an image for adjustment, which can be particularly useful when adjusting skin tones.

To use the colour targets, click on the Target tool on the Hue, Saturation or Luminosity settings. Now click and hold on the colour in the image you wish to adjust and move the mouse up or down to increase or decrease the effect. For example, when the Saturation palette is open, clicking a red colour on the image and moving the mouse up will increase the saturation of all the red tones.

## 29 CALIBRATE LIGHTROOM AND CAMERA RAW FOR YOUR PARTICULAR CAMERA

As Lightroom and Camera Raw have evolved, Adobe has updated the way in which colours are handled. The latest versions of Lightroom 3 and Camera Raw 6 have a range of profiles that can be applied to images. By default, Adobe Standard is the new applied profile, but the older ACR 4.3 and 4.4 standard profiles are also available. These profiles tell the software how to render the colours of raw images from particular cameras.

Fairly recent additions are the 'Camera...' profiles such as Camera Landscape, Camera Vivid and Camera Portrait. These profiles try to replicate the different picture styles that

can be applied in-camera to JPEG files.

Of course, if you aren't happy with the look of the chosen camera profile, you can adjust the colours in the profile and apply these settings when importing images. And by using your camera to photograph a colour chart it is possible to create your own camera-specific profile.

The X-Rite ColorChecker Passport received five stars when it was reviewed in AP 7 November 2009. It is a passport-sized case containing a series of colour charts, one of which is based on a standard GretagMacbeth

chart. By photographing the chart, the included software can create a profile specifically for your camera and the lighting conditions at the time.

The profile is automatically loaded to Adobe Camera Raw or Lightroom, where it can be applied to all the images taken during that shoot. Because the profile matches the colours of the photographed chart to the physical chart, when the custom camera profile is applied in Camera Raw or Lightroom the colours of the images should be a close match to those of the photographed scene.

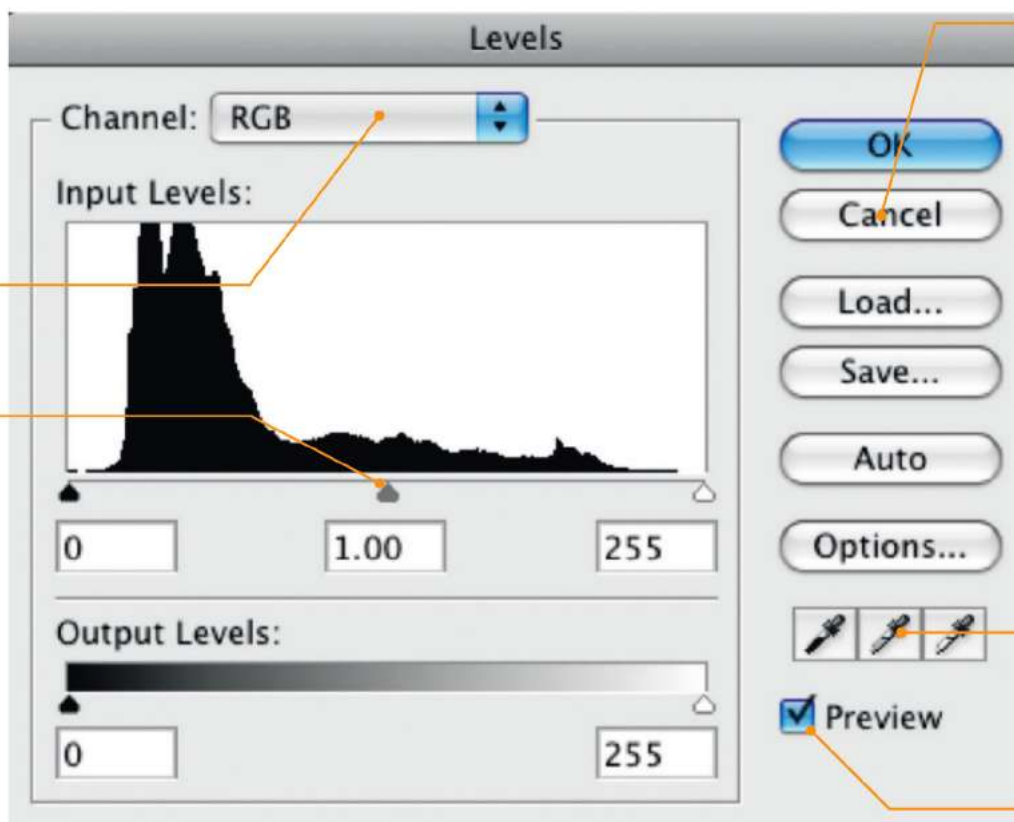


**Channel**

Use this drop-down list to access the histograms for the three colour channels

**Black, white and grey point**

These three arrows can be moved to set the black (left arrow), white (right) and midpoints of the image brightness. Ideally, the black and white points should be dragged in towards the centre so they just meet the trace

**Cancel/Reset**

When the Levels palette is open in Photoshop, holding down the Alt key turns the Cancel option into a Reset option. Selecting it undoes any adjustment and reverts the image to its original state

**Droppers**

The white and black droppers can be used to set the white and black points directly, while the central grey dropper can be used to remove a colour cast in Photoshop and Elements

**Preview**

Tick and untick this to turn the preview on and off

# Using Levels

The Levels display is essentially a histogram that shows the brightness of the pixels making up an image. It provides a method of adjusting brightness, contrast and colour

## 30 SET THE BLACK AND WHITE POINTS

There are three arrows beneath the Levels histogram, with the far right one controlling the image white point, the left one the black point and the middle one marking the midtone value. Dragging the white arrow left towards the centre until it meets the graph trace brightens the highlights and introduces some white pixels. Meanwhile, dragging the shadow arrow to the right darkens the shadows and sets the black point. The overall effect is a boost in contrast.

Every image is different, but the general aim is to set the black and white points so that the maximum number of tones are present, with no clipping (loss) of the highlights or shadows.

Moving the midtone slider compresses or stretches out the tones on either side of the central arrow. Moving it to the left brightens the image and moving it to the right darkens it.

## 31 USE THE ALT KEY TO REVEAL WHICH PIXELS ARE CHANGED

In Adobe Photoshop and Elements, holding the Alt key down while dragging the shadow and highlight arrows to set the black and white point reveals which pixels are being made black (0) or white (255). This is useful for ensuring that plenty of highlight and

shadow detail is preserved and that clipping is avoided.

## 33 USE THE GREY DROPPER TO CORRECT A COLOUR CAST

In Corel's PaintShop Photo Pro X3, the grey dropper in the Levels palette can be used to set the midtone brightness, in a similar way that the black and white droppers set the black and white points. With Adobe

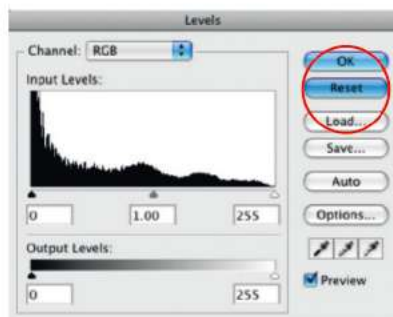
## 32 USE THE DROPPERS TO SET THE WHITE AND BLACK POINTS

Some people find using the droppers on the image a more intuitive way of setting the white and black points. Simply select the appropriate dropper and click on an area that should be white or black. Keep an eye on the histogram as you do this to make sure you don't clip the highlights or shadows, and if necessary repeat the process using a different sample area.



## 'Some software offers the option to reveal any clipping on the image as it is adjusted'

software, however, it can be used to define an area that should be neutral. Rather than adjusting the image brightness, the software alters the image colour to render the selected point neutral. This is a very quick and easy way of getting rid of colour casts. It also has the benefit of being easily undone and repeated if the first attempt doesn't produce quite the result you were looking for.



## 34 ACTIVATE THE RESET IF YOU MAKE A MISTAKE

Rather than using cancel to close down the Levels control panel when you make a mistake, use the Reset option. This is visible in the Levels palette of Elements 8 and PaintShop Photo Pro X3, but Photoshop users have to hold down the Alt key to reveal it in place of the Cancel button. Using the Reset option undoes any changes that you have made when dragging the arrows or using the droppers.

## 36 TURN THE PREVIEW ON AND OFF TO SEE THE IMPACT OF THE ADJUSTMENT

PaintShop Photo Pro X3's Levels panel has a small preview screen, but it is still useful for viewing any adjustments to the main image by ticking and unticking the Preview on Image box. Similarly, Adobe Photoshop and Elements 8's Levels panels have a Preview option that can be selected and unselected to switch between the original and adjusted images.

## 37 USE THE CLIPPING WARNINGS

Some software offers the option to reveal any clipping on the image as it is adjusted, which is useful when trying to avoid losing detail. With Adobe Photoshop Lightroom and Adobe Camera Raw this feature can be activated by clicking on the arrows above the histogram, level with the black and white points. As the shadows are darkened any black points turn blue on the image, while clipped highlights are displayed in red.

## 38 AVOID PURE WHITE AND BLACK AREAS IN PRINTS

By default, the white point is set to 255 and the shadows to 0 in Adobe Photoshop, but this can be changed to make subtle gradations at either end of the brightness

range more visible in prints. It also reduces the amount of blank white paper visible in prints made from very bright images. Reset the values as follows:

- 1 Double-click the white dropper in the Levels palette to bring up the Color Picker palette.
- 2 Adjust each of the RGB values to 245, before hitting OK. The brightest areas of an image will now have a value of 245 rather than 255.
- 3 Now double-click the black dropper on the Levels palette and set the RGB values to 10, then select OK.
- 4 Click OK on the Levels palette and select Yes when asked to save the new target values as defaults.

## 39 SAVE LEVELS SETTINGS TO APPLY TO MULTIPLE IMAGES

If you have several images taken in the same conditions, it may be useful to save the Levels settings that have been applied to one image so they can be applied to the others.

After adjusting the Levels for the first image, but before hitting OK, select Save. When the Save dialogue box opens, create a folder called Levels and save the file with a meaningful name, perhaps linking it to the image name or the shooting location and conditions. Then select Save. When you open the next image that needs the same Levels adjustment, open the Levels palette, choose Load and locate the correct file in the Levels folder.

## 35 USE LEVELS TO ADJUST COLOUR

By default, the Levels palette opens with the RGB or luminance option selected, but the drop-down list allows adjustments to be made to each of the colour channels in turn. This is useful for adjusting image colour and can be used in a similar way to the colour balance controls.

When a single channel is selected, the black and white points have colours, with the channel colour on the right and its opposite colour on the left. So the red channel has a cyan point on the left and a red point on the right, the green channel has magenta (left) and green (right), while

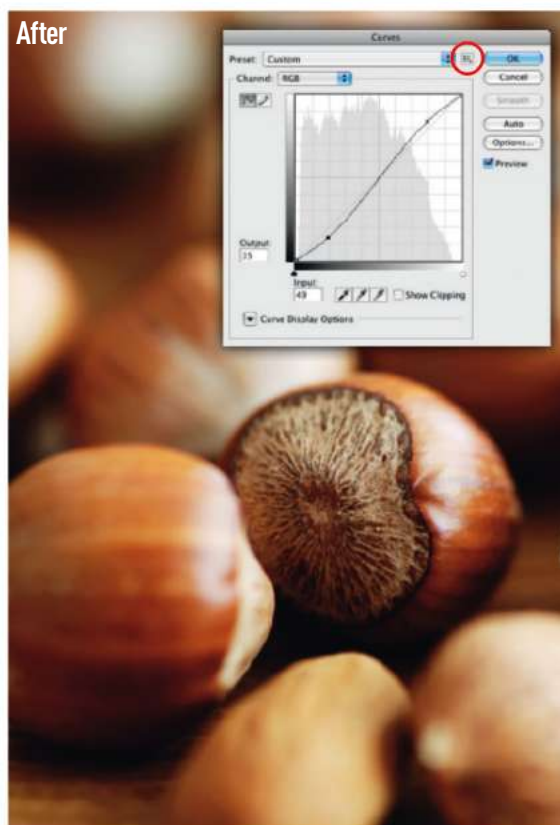
the blue channel runs from yellow (left) to blue (right).

The first step in correcting a colour cast using Levels is to drag the end points in towards the histogram trace, just as when setting the black and white points. Moving the end points any further into the middle than the edge of the trace clips the highlights or shadows of that channel, so any additional adjustment is made using the central control point. Dragging the midpoint to the left increases the amount of the channel's colour, while dragging the midpoint arrow to the right increases the level of the opposite colour.



# Using Curves

Curves is one of the most useful and powerful image-editing controls. It allows specific tones in an image to be manipulated to alter brightness, contrast and colour



## 40 BOOST CONTRAST WITH AN S CURVE

After the black and white points have been set with Levels, the Curves control panel should be the next port of call. By default, this shows a graph with the image pixel's input and output brightness represented as a diagonal line running from the bottom-left to the top-right corner. The Level's histogram is also usually shown to indicate the image's brightness distribution.

With Photoshop Elements, the Curves control is found in Full Edit mode via Enhance>Adjust Colour>Adjust Color Curves, and the curve shape must be manipulated using four sliding controls; it cannot be adjusted directly. In Corel's PaintShop Photo Pro X3 (Adjust>Brightness/Contrast>Curves) and Photoshop CS5 (Image>Adjustments>Curves or Ctrl+M), however, the image curve can be manipulated directly by clicking on it to add anchor points and then moving them to bend the curve. The pixel brightness is often indicated by the black-white gradation bars along the graph axis.

Moving an anchor point up, thereby making the output value higher than the input value, brightens the image. Conversely,

moving a point down darkens the image. If a single anchor point is placed on the curve and moved, the whole image is affected, but if there are multiple points the adjustment can be isolated to specific parts of the curve so that only certain tonal ranges of the image are adjusted.

Adding an anchor point in the top quarter or highlight section of the curve and dragging it up followed by dragging down a point in the bottom (shadow) section of the curve, to create a shallow S-shape (see above), brightens the highlights while darkening the shadows, thus increasing image contrast.

An inverted S-shape, created by darkening the highlights and brightening the shadows reduces contrast. However, this is far less useful and is generally not as successful as the contrast-boosting adjustment.

As the black and white points are locked by default, manipulating the curve cannot clip either the shadows or the highlights. It is, however, possible to shift the end points of the curve if necessary.



## 41 USE RESET IF YOU MAKE A MISTAKE

There's no need to cancel the Curves adjustment and then reopen the control palette if you make a mistake. Just press the Reset button to revert the curve back to its original straight diagonal state. Photoshop users need to hold down the Alt key to reveal the Reset option in place of the Cancel control.

## 42 CLICK ON THE IMAGE TO FIND THE POINT ON THE CURVE

If there is a specific area of the image that needs brightening or darkening, click on it to reveal where the anchor point needs to be located on the curve.

## 43 DELETE AN ANCHOR POINT IF IT GETS IN THE WAY

If an anchor point is getting in the way of the curves adjustment and is preventing a section of the curve from being adjusted by another point, it can simply be deleted. Either click on the point in question and hit the delete button or drag it off to the side of the Curves panel.

## 44 USE THE GREY DROPPER TO REMOVE A COLOUR CAST

As with the Levels control, the grey dropper in Photoshop's Curves palette isn't used to adjust brightness, but colour.

## 45 USE THE WHITE AND BLACK DROPPERS

As with the Levels control, it is sometimes easier to select parts of the image to set the Curves adjustment. The dropper tools near the bottom of the Photoshop Curves panel can be used to set the black and white points. With the white point dropper selected, click on the part of the image you wish to be white and use the black dropper to set the black point. If necessary press Ctrl+'+' to zoom in and locate small areas of highlight or shadow, followed by Ctrl+'-' to zoom out again. Similar droppers are found in PaintShop Photo Pro X3, but they must be used on the small image preview.

Using the droppers to manipulate the curve in Photoshop works on the three colour (RGB) channels separately, to give the white and black points the correct colour and brightness. The luminance (RGB) can still be manipulated to adjust image brightness and contrast.

Having selected it, simply click on any part of the image that should be neutral to remove the colour from that area. The three colour (RGB) curves will be automatically adjusted to make the selected point neutral. Any of these can be manipulated manually by using the Channel drop-down list to select each channel in turn.

## 46 SAVE THE CURVES ADJUSTMENT TO APPLY TO OTHER IMAGES

Corel PaintShop Photo Pro X3 and Adobe Photoshop allow Curves adjustments to be saved and applied to other images taken in the same conditions. The Save icon is next to the Settings box in the Curves panel of PaintShop Photo Pro X3, and the Settings drop-down list is used to select any saved adjustments.

Save a Curves adjustment using Photoshop CS4 as follows:

- 1 After adjusting the Curves for the first image, but before hitting OK, click on the icon next to the Preset drop-down box (see Curves dialogue, inset left) and choose Save preset.
- 2 When the Save dialogue box opens create a folder called Curves and save the file with a meaningful name, perhaps linking to the image name or shooting location and conditions. Then select Save.
- 3 When you open the next image that needs the same Levels adjustment, open the Levels palette, click on the Preset icon and select Load Preset before locating the correct file in the Curves folder.



## 47 AVOID THE CROSSED-CURVES EFFECT

Over-manipulating the image curve can result in the crossed-curves effect, which shows up as areas of uniform tone, patches of grey and in more extreme cases, wild, vivid colours. These phenomena develop when large numbers of pixels are adjusted to have the same brightness and there are horizontal areas, or peaks and troughs in the curve.

## 48 FADE THE CURVES ADJUSTMENT TO AVOID A SATURATION BOOST

Adjusting the curve to boost contrast is often accompanied by an increase in colour saturation. To avoid it, select Edit > Fade Curves and choose Luminosity from the Mode drop-down list. Alternatively, if the curve is applied via an adjustment layer, set that layer's Blending Mode to Luminosity using the drop-down list in the Layers palette.



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# Colour

Getting colours just right is an essential part of editing an image, and these tips can help

## 49 CALIBRATE YOUR MONITOR

As you assess and adjust images on the basis of what you see on your computer monitor, it's essential that it displays colour accurately. If the screen has a green cast, for example, you will be fooled into increasing the amount of magenta in images to correct it. As a result, any prints will have a magenta cast. From here, getting correctly coloured prints is guesswork because the actual image colour can't be seen.

These problems can be avoided by using one of the many monitor-calibration systems available on the market. They work by comparing the monitor image to known standards and producing a profile that adjusts the screen picture to make it neutral. Although there are several monitor calibrators available for under £150 (for example, Eye-one Display 2, Spyder 3 Elite and Pantone HueyPRO), a combined monitor and printer calibrator may be a better buy if you plan on making prints (see tip 51).

## 50 USE ELEMENTS' REMOVE COLOR CAST CONTROL

Adobe Photoshop Elements 8's Remove Color Cast control (Enhance>Adjust Color>Remove Color Cast) provides one of the fastest ways to correct image colour. Once the palette is open, simply use the dropper to select any part of the image that should be neutral – be it a highlight, midtone or shadow. Part of the beauty of this tool is that it can be used over and over until you find the right sample point to make the image look right. Once you are happy, click on the OK button to make the change. Zooming into the image using Ctrl + '+' can make it easier to sample from small areas that should be neutral.

## 51 CALIBRATE YOUR PRINTER

Is there anything more frustrating than perfecting an image on-screen and then producing prints that bear little resemblance to it? Once the computer monitor is calibrated, the next step is to calibrate your printer as this ensures it delivers exactly the right amount of each ink to create the colours of an image accurately. X-Rite's

ColorMunki Photo (around £320) is a good choice as it is easy to use and can calibrate both monitors and printers. Although it retails for £320, it can save you a fortune in wasted ink and paper.

## 52 USE PHOTO FILTERS TO WARM OR COOL IMAGES

Photoshop and Elements 8's Photo Filter Adjustment Layer (Layer>New Adjustment Layer>Photo Filter) provides a quick way of warming or cooling an image. There is a collection of different filter colours, or you can specify a personal one using the Color option (click on the coloured box to access the Selection tool). As the effect is applied as an adjustment layer, its impact and intensity/opacity can be altered at any time.

## 53 REMOVE A COLOUR CAST WITH VARIATIONS

Although the colours in an image may not look quite right, it isn't always obvious how to correct them. For example, distinguishing

cyan from a blue and green cast isn't easy. Fortunately, many editing packages offer a variations-type adjustment that allows several versions of the image to be compared and the colours to be adjusted by picking the image that looks the best. In Photoshop this control can be found under Image>Adjustment>Variations, while in Elements 8 it's under Enhance>Adjust Color>Color Variations. The adjustment can be applied to the shadows, midtones or highlights, and the extent of the difference between each of the variations can be adjusted using a sliding scale running from Fine to Coarse. Helpfully, colour saturation and brightness can also be adjusted.

## 54 USE THE CHANNELS PREVIEW TO GUIDE CHANNEL MIXING

Before using the Channel Mixer to convert a colour image to monochrome, take a look at each channel's image to decide which one should dominate the conversion and to guide the mixing process. In Photoshop, bring up the Channels palette by selecting Window>Channels then click on each channel (red, green and blue) in turn to preview the image.





# Using Layers

Layers are useful for preserving the original image, working on specific areas, copying adjustments and creating advanced effects

## 55 USE LAYERS TO PROTECT THE ORIGINAL

Think of layers as a pile of pictures stacked on top of each other, but all contained within the same file. When the top layer has the Normal blending mode only it is visible, but this can be changed by using different blending modes (see Tip 60) or removing parts of the uppermost layer. A layer can just be a duplicate of the original (Background) image and is useful to allow adjustments to be made while still preserving the starting point.

## 56 USE THE ALT KEY TO HIDE/REVEAL LAYERS

With multiple-layer images, clicking on each layer's eye icon can be laborious, but if you click on the eye icon of the layer that you wish to see by itself while holding down the Alt key, all the other layers are hidden. Repeat the exercise to reveal them again.

## 58 USE ADJUSTMENT LAYERS

Adjustment layers are extremely useful as they contain instructions about how to adjust a layer without actually affecting the pixels directly. Photoshop allows all the most common adjustments, including Levels, Curves and Color Balance, to be made as adjustment layers. The settings of the adjustment layer can be changed at any time, even after the image has been closed and reopened, provided it is saved in a format such as TIFF or PSD, which preserves layers.

**'Photoshop allows all the most common adjustments, including Levels, Curves and Color Balance, to be made as adjustment layers'**

## 59 COPY LAYERS BETWEEN IMAGES

Once a layer has been created, it can be copied to other images by simply clicking on it in the Layers palette and dragging it across to the other open file. This is especially useful for copying adjustment layers between images.

## 60 USE LAYERS TO WORK ON DIFFERENT PARTS OF THE IMAGE

By using multiple layers and revealing specific sections using masking techniques, it is possible to create a composite image. This may be made from several copies of the original image (layers made from the Background) that have been adjusted in different ways, or sections of different images can be combined. For example, a dull sky can be replaced by a more interesting one.

## 57 LEARN HOW TO MANAGE LAYERS

The Layers palette is central to managing the layers that make up an image. It contains options to hide or reveal layers, alter how they blend with the layer below and to create masks to reveal only certain areas. When an image is opened for the first time there is only one layer, called Background. The starting point for many adjustments should be to create a duplicate layer (Layer>Duplicate Layer) so the background remains untouched (see Tip 55). Alternatively, an adjustment layer can be created (see Tip 58).

Layers can be reordered in the palette by clicking on them and dragging them up or down in the stack. Moving a layer from the bottom of the Layers palette stack to the top makes that layer visible. If this layer contained an image of an interesting sky (with

the landscape beneath cut out), for example, dragging it above a layer with an image of a landscape with a dull sky would effectively paste the better sky over the dull one to create a more attractive landscape.

Layers may be turned on or off to make them (or their impact) visible or invisible. In Adobe's Photoshop and Elements and Corel's PaintShop Photo Pro X3, layer visibility is controlled by the eye icon in the Layers palette. If the eye is visible, so is the layer. Clicking on the eye makes both it and the layer invisible.

Multiple layers can be selected by clicking on one and then holding the Shift key down while clicking on the others to select them. Any adjustment applied to a linked layer is automatically applied to the layers it is linked with. In Photoshop, layers are linked by selecting

them in the Layers palette and then clicking on the chain icon at the bottom. Layer merging is helpful when two or more layers are used to make up a section of image. For example, if two layers of a blue sky each with a single cloud are used to create one with two clouds, it's helpful to merge them into a single layer called 'Sky'.

Each layer's blending mode may be set using the drop-down list in the top left of the Layers palette. The Background's blending mode cannot be changed from Normal.

Two sliding controls at the top right of the palette govern how transparent each layer is. The key control here is Opacity. Reducing the Opacity of a layer makes it less visible to reveal the one below. The Fill control is very similar, but only the layer contents are affected and any applied effects retain their full Opacity.



## 63 LEARN HOW TO USE THE BLENDING MODES

IN PHOTOSHOP, THERE ARE 24 BLENDING MODES ORGANISED INTO SIX GROUPS DEPENDING UPON THEIR EFFECT. THESE ARE:

### STANDARD NORMAL, DISSOLVE

Normal is the default mode, while Dissolve makes the lower layer take on the colours of the upper layer. Its impact increases as the top layer's Opacity decreases.

### DARKEN DARKEN, MULTIPLY, COLOR BURN, LINEAR BURN, DARKER COLOR

These generally darken the image. Darken compares each pixel value of the upper layer to the corresponding values of the lower layer and displays the darker of the two. Multiply darkens the lower layer based upon the darkness of the upper layer. No part of the image will get lighter. White in the upper layer becomes transparent.

### LIGHTEN LIGHTEN, SCREEN, COLOR DODGE, LINEAR DODGE (ADD), LIGHTER COLOR

These effectively lighten the image. Lighten is the opposite of Darken and in this mode the lightest pixel value at each point is used. Screen brightens by lightening the lower layer based on the brightness of the upper layer.

### CONTRAST OVERLAY, SOFT LIGHT, HARD LIGHT, VIVID LIGHT, PIN LIGHT, HARD MIX

These blending modes lighten and darken the image to boost contrast. Overlay multiplies the light colours and screens the dark colours.

### DIFFERENCE DIFFERENCE, EXCLUSION

These modes compare pixels between layers to reveal differences.

### HUE HUE, SATURATION, COLOR, LUMINOSITY

These blending modes influence the colour or brightness of the final image. Hue/Saturation changes the hue/saturation of the lower layer to those of the upper layer, leaving brightness as it is. Luminosity changes the brightness of the lower layer to that of the upper layer while leaving hue and saturation as they are.

## 61 USE THE NUMBER CONTROLS TO ADJUST OPACITY

With the Move tool selected in Photoshop and Elements, the Opacity of the current layer can be adjusted by hitting any of the number keys. The values change in tens, so selecting 4 sets the Opacity to 40, while 6 sets it to 60. More precise values can also be entered if necessary.

## 62 USE OPACITY TO MERGE LAYERS

The Opacity control (see Tip 57) is a useful and simple way of subtly merging two layers, by making the upper layer less visible to reveal the one beneath.

## 64 REPLICATE THE LAYER MASK EFFECT IN ELEMENTS

In Photoshop, Layer Masks are a very useful way of merging two layers to reveal specific parts of the lower layer. They are powerful because the mask can be edited easily. Although there isn't a Layer Mask option in Photoshop Elements, it is possible to replicate the effect by adding an adjustment layer between the two layers you wish to

merge. To do this, select the background layer and create an adjustment layer (any will do), but don't make any adjustments.

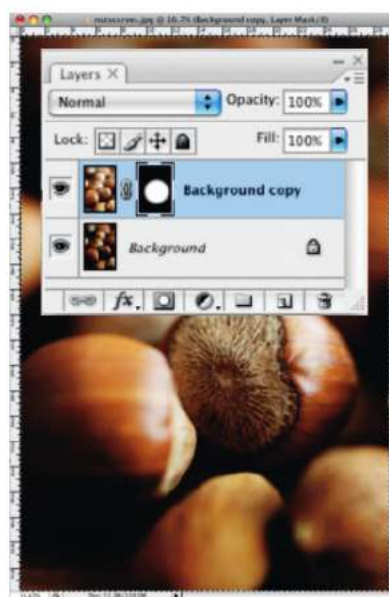
Next, select the top layer in the Layers palette and select Layer>Create Clipping Mask (Ctrl+G) to link this layer with the adjustment layer below. Now with the Foreground and Background colours set to their defaults, select the adjustment layer in the Layers palette and paint on the image where the background needs to show through. If you make a mistake, switch the Foreground and Background colours around and use white to paint the top layer back in.

## 65 CYCLE QUICKLY THROUGH THE BLENDING MODES

When experimenting with different blending modes most people using the drop-down list, but in Elements and Photoshop you can toggle through all the various modes by holding down the Shift key as you press the + or - key when the layer is selected.

## 66 USE LOAD SELECTION TO COPY SELECTIONS BETWEEN LAYERS

When the same selection area, or the opposite area, is needed for two or more layers, click on the first layer in the Layers palette and choose Select>Load Selection.



A Layer Mask is indicated by a black rectangle in the layer properties in the Layer palette. As the mask is edited, grey or white appears

## 67 CREATE A NEW LAYER FROM EXISTING LAYERS

Once you have created and edited the content of the layers it can be useful to stamp them into another layer by selecting Ctrl+Alt+E. The original layers are still visible and editable, but the new layer merges them into one. This can be useful towards the end of adjusting a landscape image, where different treatments may have been applied to the sky and the foreground. Any dodging and burning can be applied to the new layer, preserving the original layers.



# Tools

Whatever image-editing package you use, learning more about the tools can speed up adjustment making

## 68 LEARN HOW THE CLONING AND HEALING TOOLS WORK

Most image-editing software packages have a small collection of repair tools that are useful for removing dust marks and getting rid of unwanted objects. It's important to understand how these tools differ. In Photoshop CS4, for instance, the Clone Stamp tool is very useful for getting rid of small dust marks and copying pixels over problem areas. The Healing Brush is useful when the texture of the problem area needs to be replaced, but the colour and tone must be kept the same. It can be useful for removing laughter lines and small wrinkles on portrait subjects.

While the user selects the source area (the part of the image being copied) for both the Clone Stamp and the Healing Brush, the Spot Healing Brush is automated so the source cannot be selected. It is useful for cleaning up areas of even tone and texture – perhaps removing power lines from a blue sky.

The Patch tool is similar to the Healing Brush, but a larger area is selected and repaired.

## 69 SET THE TOOL TO SUIT YOU

You wouldn't paint window frames with the same size brush as you would use to cover a wall, so adjust the diameter of the editing tool you are using to work on an image. A large, soft brush with a low opacity of around 5% is a good choice for many dodging and burning activities as it allows the effect to build up gradually with subtle edges. A smaller, harder brush is useful for refining the edges of a layer mask and ensuring all the leaves of a tree on the horizon of a landscape are masked accurately.

It is also sometimes possible to change the appearance of the brush or cursor to suit your preferences. In Photoshop CS4, for example, the options under Edit>Preferences>Cursors enable painting cursors to look like a brush, form a crosshair or be circular (with or without a crosshair).

**'The Patch tool is similar to the Healing Brush, but a larger area is selected'**



Experiment with each option to see which works best for you.

## 70 USE THE RIGHT SELECTION TOOL FOR THE TASK

Selections can be made using a number of tools and understanding how they work makes the whole process a lot easier. Select each tool in turn and practise making selections of specific areas of an image to see how it performs.

## 71 USE THE HISTORY BRUSH

Photoshop's History Brush enables you to selectively remove edits and restore parts of an image to a previous point in the adjustment history. It's popular for painting

colour back into an image that has been converted to black & white, painting detail back into a shot that has been blurred by a filter, and for applying the image-softening Dust Scratches filter just where it is needed.

The adjustment steps are listed in the History palette (Window>History) and the point in the History that you want to paint back in is selected by clicking in the empty box next to the relevant entry. If you make a mistake, select a more recent state and paint the adjustments back in.

## 72 MAKE SNAPSHOTS

As you make adjustments to images, create History Snapshots every now and again so you have a quick way of undoing any further editing. These act like markers at key stages of the adjustment and are very useful when combined with the History Brush. A thumbnail of the Snapshot sits under the image thumbnail in the History Palette. To revert to that point in the History, simply click on it in the palette. Alternatively, click in the box next to it in the palette with the History Brush and paint the areas where you wish to revert to this former state.

## 73 ACTIVATE TOOL TIPS

When Photoshop's Show Tool Tips option is activated via Edit>Preferences>Interface, the name of each tool in the toolbox is revealed when the cursor hovers over it. This is especially useful when learning how to use new tools.

## 74 LEARN HOW THE SHIFT, CTRL AND ALT KEYS MODIFY TOOLS

Pressing one of these keys while using some tools can alter how they work. In Photoshop, Elements and PaintShop Photo Pro, for example, after making a selection, holding the shift key down enables you to add to the selection. This is indicated by a small + next to the cursor. Conversely, holding down the Alt key in Photoshop and Elements, and the Ctrl key in PaintShop Photo Pro, introduces a – next to the cursor, indicating that the selection can be reduced by using the tool.



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# Streamline your workflow

Image editing can be a time-consuming process, but there are a number of things you can do to improve and speed up the way you work with your photographs

## 75 HIDE ALL PALETTES

In Adobe Photoshop and Elements, pressing the TAB key hides or reveals all tool palettes, leaving just the image on screen. Pressing Shift + TAB hides everything except the toolbar.

In Lightroom, pressing TAB hides the side toolbars, and Shift + TAB toggles the top and bottom toolbars on and off. Ridding your screen of the toolbars allows you to concentrate your attention fully on the image being edited.

## 76 CREATE AN ACTION

Actions allow repetitive tasks such as resizing a series of images to be reduced to a single click. To create an Action, open the Actions palette by selecting View>Actions. Click on the Create New Action button at the bottom of the palette and give the new Action an appropriate name.

To begin to record a new Action, press the record button at the bottom of the palette. Now simply edit the image and all your actions will be recorded. Once you are done, press the Stop button to finish. If you have made a mistake, you can edit individual steps by simply deleting the incorrect step and recording it again.

To apply the Action to an image, click on the required Action and press the Play button. Photoshop will then automatically apply the recorded adjustments to the image.

## 77 DOWNLOAD ACTIONS

There are hundreds of Actions available to download for free or to purchase on the internet. One of the best resources for downloading Actions is Adobe Photoshop Exchange and Adobe Photoshop Marketplace ([www.adobe.com/cfusion/exchange](http://www.adobe.com/cfusion/exchange)).

## 78 USE YOUR SOFTWARE FULL-SCREEN

In Adobe Photoshop, Elements and Lightroom, pressing the F key toggles through the various options available and

will allow you to use the software full-screen. This allows a little more screen space that can be utilised by the software.

## 79 COMPARE IMAGES SIDE BY SIDE

When rating images (see Tip 13), it's helpful to use your software's image-comparison facility if it has one.

With Elements 8, select the images you're interested in and click on the Compare Photos Side by Side Option under Display in the top right of the Organiser, or hit the F12 key. Use the navigation arrows to toggle

## 80 USE A SECOND MONITOR

Screen space is always going to be at a premium, especially if you happen to use a laptop computer. However, most laptops have the facility to connect an external monitor while still using the built-in screen. This requires the desktop computer to have a graphics card that is capable of connecting two monitors, which may cost £100 or more. Cheap USB-to-VGA adapters are also available, but the image will not be of as high a quality as with a dedicated graphics card.

If you have a good-quality existing monitor then the additional monitor doesn't need to be of a high quality. It doesn't even have to be very large; a small, cheap monitor can be used simply to display all the toolbars and palettes, leaving the existing monitor free to display nothing but the image being edited.

through the selected images one by one. The image on the left changes while the one on the right stays the same. Once you have identified your preferred image, move the cursor over the Quick Edit tab on the left to access the star rating options.

## 81 CREATE A DROPLET

A droplet is a file that you can drag and drop image files and folders onto, with the droplet then performing a predetermined action. To create a droplet, select

File>Automate>Create Droplet and then choose a location to save your Droplet to, and give it an appropriate name. Now select the Action that you wish the droplet to perform (see Tip 76 for how to Create an Action). Finally, choose where to save the processed files and how you wish them to be named.

Now all you have to do is drag and drop your images, or a folder of images, onto the droplet. It will then perform the selected Action and save all the processed images to your chosen location.



## 82 USE QUICK MASK TO MAKE SELECTIONS

Switching to Quick Mask editing mode is done by pressing the button towards the bottom of the Tools palette. By painting on the image with the black colour swatch selected, parts of the image can be masked. Conversely, painting white onto the image removes areas of the mask.

The real flexibility comes from changing the Opacity of the brush. If you paint on a mask using 100% Opacity, that area of the image will be completely masked. If a lower Opacity of, say, 80% is used, any changes will still lightly affect that area.

Pressing the Quick Mask button again exits Quick Mask mode and turns the masked area into a selection. This allows you to make changes with the selected area remaining masked. The technique is extremely useful for selectively adjusting areas of a landscape image, or when adding a gradient to darken a sky.

Hitting the Q key is a quick and easy way of entering and exiting Quick Mask mode.



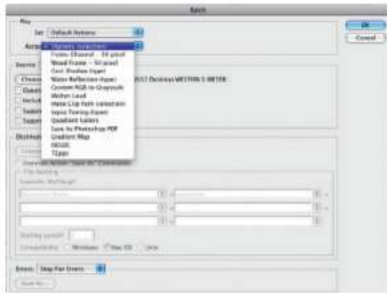
## 83 USE A GRID OVERLAY

Grids can help you check whether your horizons are straight, and are also invaluable when performing lens corrections. To show a grid in Adobe Photoshop or Elements press Shift+' and in PaintShop Photo Pro press Ctrl+Alt+G.

## 84 SHOOT TETHERED FOR BETTER PREVIEW IMAGES

If you are shooting in a studio environment you can assess images easily by shooting with your camera tethered to a computer. There are a number of software packages that can do this, including the latest version of Lightroom and Apple Aperture, as well as propriety software supplied by camera manufacturers. Canon and Sony supply it free with their DSLRs.

With Lightroom, connect a camera to the computer using a long USB cable and set up the software to automatically download images from the camera to a particular folder. The software then needs to be told to watch this folder for new images and import them. Once imported, the last image you shot will be displayed on the computer screen, allowing you to check the exposure for fine details.



## 85 BATCH PROCESS

If you need to apply an Action to a number of images Photoshop can automate this task for you quickly and easily. Select File>Automate>Batch. This will allow you to select an Action to be applied to a folder or selection of images. This can speed up the task of resizing images or adding borders or a watermark.

## 86 USE SAVE FOR WEB

Adobe Photoshop CS5, Elements 8 and Lightroom 3 have a convenient option for saving images for use on the web, called Save for Web and Devices under the File option in the menu bar. This allows you to

specify the size, file type and colour space of the image as it is saved. It is especially useful for photographers with websites as the settings can be saved for and applied to other images. It is also a good subject for automation via an action (Tip 76) and droplet (Tip 81).

## 87 ADD MORE HISTORY STATES

If you are performing a task such as dodging and burning where you might make many small changes, it is a good idea to increase the number of History States that are recorded. This will allow you to go back through the History should you make a mistake or take the retouching a few steps too far. To increase the History States in Photoshop or Elements select Edit>Preferences>Performance and alter the slider to increase the number.

## 88 USE A GRAPHICS TABLET

A graphics tablet has a surface that is sensitive to a specific stylus. The surface of the tablet represents the screen and, as you move the stylus around the surface of the tablet, the on-screen cursor will mimic your movement. The stylus is held like a pen, which gives image editing a much more natural feel compared to using a mouse. This makes it particularly beneficial for retouching tasks using editing software.

Even a small-size graphics tablet can make a difference, and those starting out should look no further than the Wacom Bamboo Fun Pen and Touch Tablet, which received four stars when it was tested in AP 31 October 2009. As well as being responsive to the supplied stylus,

**Using a graphics tablet and assigning shortcuts to its buttons can speed up image processing**



it recognises separate touches from your fingers, which allows you to easily zoom in and out and scroll images. Visit [www.uk.shop.wacom.eu](http://www.uk.shop.wacom.eu) for more information.

## 89 CREATE A SHORTCUT FOR YOUR FAVOURITE FILTER

Most of the regularly used tools in image-editing software will have their own shortcut keys (see Tip 101 for a list of Photoshop shortcuts). If your favourite filter doesn't have a shortcut key you can create your own. In Adobe Photoshop select Edit>Keyboard Shortcuts and then the Filter you wish to create a shortcut for. Then simply type in your shortcut combination into the shortcut box.

## 90 ASSIGN SHORTCUTS TO GRAPHIC TABLET BUTTONS

To adjust the function of the shortcut buttons, find the tablet driver software in System Preferences. For ease of use try setting one key to replicate the Alt key, and another to replicate the spacebar, which is the shortcut for the Move tool in Adobe software. If you have a tablet that has a scroll wheel or up and down buttons, set these to zoom in and out of an image, or to change the brush size. This should reduce the need to use a computer keyboard and in turn make using a tablet faster and even more ergonomic.



# Perfecting your images

Image-editing programs are complex pieces of software, but there are a few quick and simple ways to adjust your images to get them looking perfect

## 91 CORRECT LENS DISTORTIONS

Nearly all image-editing software features a lens distortion correction option. In Photoshop or Elements, select Filter>Distort>Lens Distortion. Use the Remove Distortion slider to correct any curvilinear distortion. For best results make sure that Show Grid is selected – the grid will allow you to judge whether the horizontal and vertical lines in the image are straight.

Any darkening at the edges, known as vignetting, can be corrected using the Vignette control. Move the Amount slider to the right to increase the brightness and adjust the Midpoint control to alter how much of the edges are affected.

Photoshop, Camera Raw and Lightroom also have a chromatic aberration control that can remove coloured fringing around high-contrast edges. Enlarge your image to 100% and focus on an affected area. Now adjust the colour sliders gradually to reduce the distortion.

The latest versions of Camera Raw 6, Lightroom 3 and Photoshop CS5 have a new Automated Lens Correction feature. This automatically corrects lens distortion and

vignetting by reading the image metadata and checking the specific camera and lens used to capture the image. Currently, lens profiles are available for the most popular Canon, Nikon and Sigma lenses, as well as a few compact cameras. While new lens profiles will be added with future software updates, it is also possible to create your own. For details on how to create your own lens profiles and to download the necessary software, visit [www.labs.adobe.com/technologies/lensprofile\\_creator](http://www.labs.adobe.com/technologies/lensprofile_creator).

If your current image-editing software doesn't already have a lens-correction feature, PT Lens is a great piece of software that costs \$25 (around £16). It allows for manual and automated correction of lens distortions, in much the same way as the latest Adobe products. However, it supports a large number of lenses and compact cameras. PT Lens works as either a standalone product or as a Photoshop plug-in and received an impressive four stars when we reviewed it in AP 25 August 2007. For more information visit [www.epaperpress.com/ptlens](http://www.epaperpress.com/ptlens).

## 92 LEVEL HORIZONS

It's always best to try to get your horizon level in-camera, but with digital editing there is no excuse for not getting it straight. Lightroom and Camera Raw both have Level tools that allow you to drag a line along a horizon and will then straighten and crop the image accordingly. In Photoshop the Ruler tool performs the same task. To use this, click and drag the tool to make a straight line along the wonky horizon. If you are using Photoshop CS4 or lower, select Image>Rotate Canvas>Arbitrary and you will see the correct angle for straightening the image will already be entered. Simply click OK to straighten the picture and crop it accordingly.

Photoshop CS5 also uses the Ruler tool, but there is an option in the top menu to automatically straighten and crop. Photoshop Elements and PaintShop Photo Pro both include Straighten tools on their respective toolbars. Make sure that the Crop Image options are selected for both tools to automatically crop the image after straightening.

## 93 CHECK BIT DEPTH WHEN SAVING AS A JPEG

If you find that you cannot save an image as a JPEG file, check the bit depth of the image. JPEG files can only be saved as 8-bit, so images must be set to this mode before they are saved. To do this in Photoshop or Elements, select Image>Mode>8 Bits/Channel.

## 94 SOFTPROOF TO SEE THE FINAL RESULT

Many pieces of software have the ability to 'softproof' an image, which is the process of adjusting the image on-screen so that it matches the printed image as closely as possible. To do this you must first have the correct colour profile for the printer, ink and paper you are using. The ICC profiles for most inkjet papers can be found on paper manufacturers' websites. Simply download

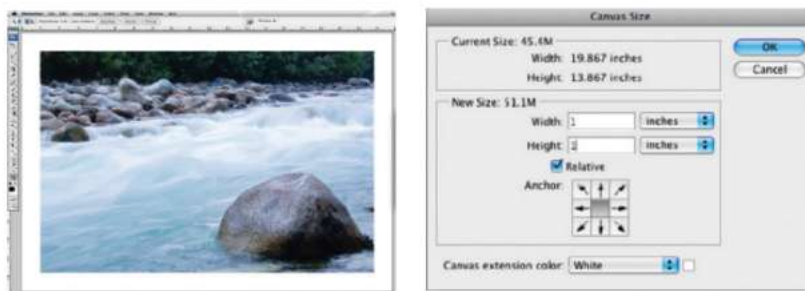
the correct profile for your printer and copy it to the Windows\system32\spool\drivers\color folder in Windows XP, Vista or 7, or right click on the file icon and select Install. If you are using a Mac, copy the file to Library/ColorSync/Profiles.

In Adobe Photoshop select View>Proof Setup>Custom and scroll down to find the correct profile. For Rendering Intent select either Perceptual (which adjusts the on-screen colours so they will be perceived as they would in print) or Relative (which adjusts the on-screen colours so they use the colours within the colour space of the printer). Make sure that Simulate Black Ink is ticked as this shows how black the ink will be, which helps to reproduce the contrast of the printed image. Simulate Paper Color replicates the colour and contrast of the paper, and as such can cause the image to look washed-out on-screen, so bear this in mind when using this setting.

All you have to do to see how the image will look once it is printed is to select View>Proof Colours. You can now make slight adjustments to the colour and contrast of the image if you wish to improve how it will look as a final print.



Adding a border  
is as simple as  
increasing the  
canvas size



**‘Despite the loss in quality, there are reasons for wanting more compressed JPEG files’**

## 95 ADD A BORDER USING CANVAS SIZE

There is a very quick way that a coloured border can be added to any image. Simply increase the Canvas Size by selecting Image>Canvas Size in Photoshop or Image>Resize>Canvas Size in Elements.

Keep the anchor locked to the centre of the image and tick the Relative box. Now just select the size of the border to be added, such as 1in to both the horizontal and vertical dimensions to add a ½in border. The newly created canvas will be filled with the current background colour, with the image placed in the centre.

## 96 USE THE ALT KEY TO PREVIEW SHARPENING

In both Adobe Camera Raw and Lightroom the Alt key can be used to preview the effects of the various sharpening adjustments. To see the adjustments make sure that the image is being viewed at 100%, then hold down the Alt key while moving the various Sharpening sliders. A greyscale image will show how the image is affected by the sharpening. This is particularly useful for seeing which areas are being masked when using the Mask slider.

## 97 RECOVER BURNT-OUT HIGHLIGHTS USING CAMERA RAW'S RECOVERY TOOL

Adobe Camera Raw and Lightroom both feature a useful Recovery slider that helps to recover highlights that have almost become completely white. To use this, first select the highlight clipping icon at the top right of Camera Raw and Lightroom's histogram displays. Any highlights will now show up as patches of red on the image. By using the Recovery slider, these areas can be reduced by darkening just these highlight areas. Turn the highlight clipping option off to see the full effect of the adjustment.

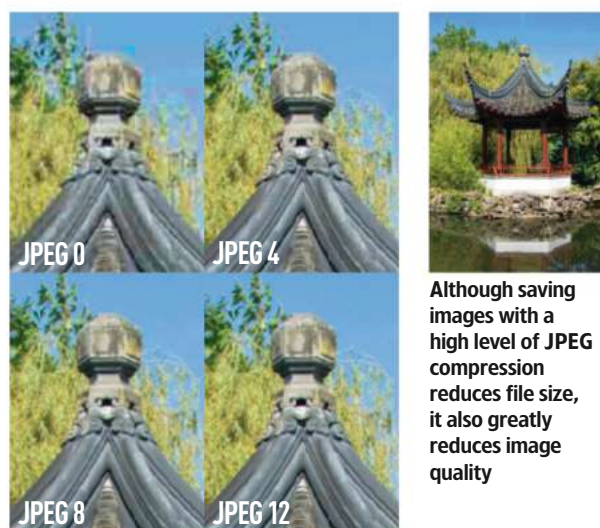
## 98 USE A KEYLINE TO DEFINE THE EDGES

In Photoshop or Elements you can quickly create a keyline or thin border around an image by choosing Select>All and then Edit>Stroke (Outline) Selection. Input the width of the stroke and the colour and then select OK.

## 99 UNDERSTAND JPEG COMPRESSION

Unlike a bitmap file, JPEG files are compressed versions of the image. Rather than indexing the colour of every single pixel, it groups together surrounding pixels of a similar colour. The lower the level of compression, the better preserved the original colours and details will be. Selecting to save an image at maximum JPEG compression groups colours together a lot more. This causes loss of detail, and can introduce banding where gradients become block-like rather than smooth.

Despite the loss in quality, there are valid reasons for wanting more compressed JPEG files. As the file size is smaller they load faster when used on the internet and are easier to send via email. However, if you want to enter an image into a competition you should always save it with the lowest possible JPEG compression you can to ensure best quality.



Although saving images with a high level of JPEG compression reduces file size, it also greatly reduces image quality

## 100 FADE SHARPENING TO LUMINOSITY TO AVOID ACCENTUATION OF CHROMATIC ABERRATIONS

When software programs sharpen an image they increase the level of local contrast. Unfortunately, the areas of an image most likely to show chromatic aberrations, or purple fringing, are the edges of high-contrast areas, such as tree branches against a bright overcast sky. Sharpening can accentuate any aberrations and make them more pronounced, but this can be avoided by fading any sharpening by using the luminosity

mode. This keeps the level of contrast at the same level, but also keeps the colour saturation at the level it was before the effect, so any chromatic aberrations are not exaggerated. To do this in Adobe Photoshop, use the Unsharp Mask filter as usual and then select Edit>Fade Unsharp Mask. Set the Mode to Luminosity and adjust the Opacity by lowering it until any coloured halos have been removed.



# 101 Keyboard shortcuts

Speed up your navigation with these useful keyboard shortcuts tips

The keys below are  
for PC users. See right  
for Mac alternatives

**PC**  
Alt ..... Opt (Alt)  
Ctrl ..... Cmd (⌘)  
Shift ..... Shift

## Adobe Photoshop

### Application Menus

#### FILE

New	Ctrl + N
Open	Ctrl + O
Close	Ctrl + W
Close all	Alt + Ctrl + W
Save	Ctrl + S
Save as	Shift + Ctrl + S
Revert	F12
File info	Alt + Shift + Ctrl + I
Page setup	Shift + Ctrl + P
Print	Ctrl + P
Quit	Ctrl + Q

#### EDIT

Undo/Redo	F1 or Ctrl + Z
Cut	F2 or Ctrl + X
Copy	F3 or Ctrl + C
Copy merged	Shift + Ctrl + C
Paste	F4 or Ctrl + V

Fill	Shift + F5
Free transform	Ctrl + T
Colour settings	Shift + Ctrl + K

#### ADJUSTMENTS

Levels	Ctrl + L
Curves	Ctrl + M
Colour balance	Ctrl + B
Hue/Saturation	Ctrl + U
Desaturate	Shift + Ctrl + U
B&W	Alt + Shift + Ctrl + B
Invert	Ctrl + I
Image size	Alt + Ctrl + I
Canvas size	Alt + Ctrl + C

#### LAYERS

New	Shift + Ctrl + N
Layer via copy	Ctrl + J
Layer via cut	Shift + Ctrl + J
Group layers	Ctrl + G
Ungroup layers	Shift + Ctrl + G

#### ARRANGE

Bring to front	Shift + Ctrl + ]
Bring forward	Ctrl + ]
Send backward	Ctrl + [
Send to back	Shift + Ctrl + [
Merge layers	Ctrl + E
Merge visible	Shift + Ctrl + E

#### SELECT

All	Ctrl + A
Deselect	Ctrl + D
Reselect	Shift + Ctrl + D
Inverse	Shift + F7 or Shift + Ctrl + I
All layers	Alt + Ctrl + A
Refine edge	Alt + Ctrl + R

#### VIEW

Zoom in	Ctrl + '+'
Zoom out	Ctrl + '-'
Fit on screen	Ctrl + 0
Actual pixels	Alt + Ctrl + 0

Rulers	Ctrl + R
Toggle screen nodes	F
Grid	Ctrl + '
Guides	Ctrl + ;

#### WINDOW

Brushes	F5
Colour	F6
Layers	F7
Info	F8

### Palette Menus

#### HISTORY

Step forward	Shift + Ctrl + Z
Step backward	Alt + Ctrl + Z

#### TOOLS

Move	V
Lasso	L
Magic Wand	W

Crop	C
Slice	K
Healing Brush	J
Brush	B
Clone Stamp	S
Eraser	E
Gradient	G
Blur/Sharpen	R
Dodge/Burn	O
Pen	P
Type	T
Selection	A
Rectangle	U
Notes	N
Eyedropper/Ruler	I
Hand	H
Screen Modes	F
Decrease Brush size	[
Increase Brush size	]

## Adobe Photoshop Elements

### Application menu

#### FILE

New	Ctrl + N
Open	Ctrl + O
Close	Ctrl + W
Close all	Alt + Ctrl + W
Save	Ctrl + S
Save as	Shift + Ctrl + S
Revert	F12
File info	Alt + Shift + Ctrl + I
Page setup	Shift + Ctrl + P
Print	Ctrl + P
Quit	Ctrl + Q

#### EDIT

Undo	Ctrl + Z
Redo	Ctrl + Y
Copy	Ctrl + C

Copy merged	Shift + Alt + C
Rotate 90° left	Ctrl + Left
Rotate 90° right	Ctrl + Right
Photoshop Elements editor	Ctrl + I
Adjust date and time	Ctrl + J
Update thumbnails	Ctrl + Shift + U
Open file in Premiere Editor	Ctrl + M

#### ADJUSTMENTS

Image size	Alt + Ctrl + R
Hue/Saturation	Ctrl + U
Remove colour	Shift + Ctrl + U
Convert to B&W	Alt + Ctrl + B
Levels	Ctrl + L

#### LAYERS

New	Shift + Ctrl + N
Layer via copy	Ctrl + J
Layer via cut	Shift + Ctrl + J

Merge visible	Ctrl + Shift + E
Merge down	Ctrl + E

#### SELECT

All	Ctrl + A
Deselect	Ctrl + D
Reselect	Shift + Ctrl + D
Feather	Alt + Ctrl + D

#### VIEW

Full-screen view	F11
Side by side view	F12
Zoom in	Ctrl + +
Zoom out	Ctrl + -
Fit image in window	Ctrl + 0
Magnify 100%	Ctrl + Alt + 0
Actual pixels	Ctrl + 1
Grid	Ctrl + '
Ruler	Shift + Ctrl + R

Switch to zoom in	Spacebar + Ctrl
Switch to zoom out	Spacebar + Alt

#### WINDOW

Show/Hide content panel	F7
Show/Hide info panel	F8
Show/Hide histogram panel	F9
Show/Hide undo history panel	F10
Show/Hide layers panel	F11

### Palette Menu

#### TOOLS

Move tool	V
Zoom tool	Z
Hand tool	H

Eyedropper tool	I
Marquee tool	M
Lasso tool	L
Magic Wand tool	W
Quick/Selection Brush tool	A
Horizontal/Vertical Type tool	T
Crop/Recompose tool	C
Straighten tool	P
Red Eye Removal tool	Y
Healing/Spot Brush tool	J
Clone/Pattern Stamp tool	S
Pencil tool	N
Eraser tool	E
Brush/Color Replacement	B
Smart Brush tool	F
Paint Bucket tool	K
Gradient tool	G
Blur/Sharpen/Smudge tool	R
Sponge/Dodge/Burn tool	O

## Corel PaintShop Photo Pro

#### FILE

Save	Ctrl + S
Save as	Ctrl + Shift + S
Properties	Alt + Enter
Print	Ctrl + P
Paste	Ctrl + V
Options	Ctrl + J
Open	Ctrl + O
New	Ctrl + N
Import	Ctrl + I
Export	Ctrl + E

#### EDIT

Undo	Ctrl + Z
Redo	Ctrl + Shift + Z
Repeat	Ctrl + R

Cut	Ctrl + X
Copy	Ctrl + C
Step and repeat	Ctrl + Shift + D

#### ADJUSTMENTS

Rotate	Alt + F8
Size	Alt + F10
Resize	Shift + S
Shape	F10
Scale	Alt + F9
Color balance	Ctrl + Shift + B
Color	Shift + F11
Brightness/Contrast	Ctrl + B
Hue/Sat/Light	Ctrl + Shift + U
High/mid/shadow	Shift + M

#### LAYERS

To front of layer	Shift + PageUp
To back of layer	Shift + PageDown
Ungroup	Ctrl + U
Duplicate	Ctrl + D

#### SELECT

Select all objects	Ctrl + A
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#### VIEW

Pan image	Alt + Direction
View manager	Ctrl + F2
Full-screen preview	F9
Toggle view	Shift + F9
Zoom	Z

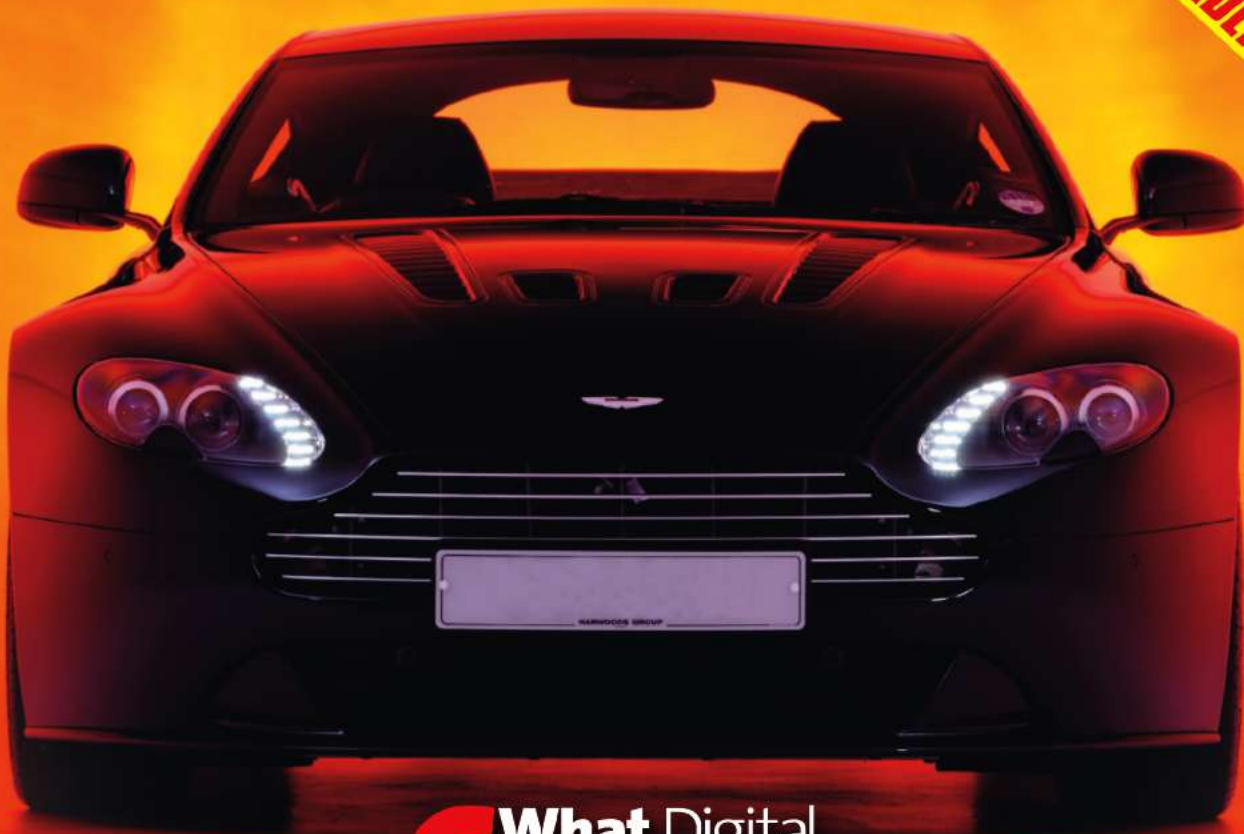
Zoom one-shot	F2
Zoom out	F3
Zoom to fit	F4
Zoom to page	Shift + F4
Zoom to selection	Shift + F2
Micro nudge	Ctrl + direction
Snap to objects	Alt + Z
Snap to grid	Ctrl + Y
Refresh window	Ctrl + W
Align bottom	B
Align center horizontally	E
Align center vertically	C
Align left	L
Align right	R
Align to baseline	Alt + F12
Align top	T

#### TOOLS

Text	F8
Graph paper	D
Rectangle	F6
Pen	F12
Polygon	Y
Navigator	N
Freehand	F5
Fountain	F11
Ellipse	F7
Eraser	X
Hand	H
Interactive Fill	M



**EXCLUSIVE  
READER EVENT!!**



## What Digital **Camera**

WITH ASA INFINITY STUDIOS, CHIDDINGLY, EAST SUSSEX

**PRESENTS**

# CAR PHOTOGRAPHY

FRIDAY 8TH OCTOBER 2010 **WORKSHOP**



**A** studio workshop aimed at demonstrating the best techniques for photographing cars and motorcycles. We will show you some of the shots that professionals take, and how they are taken. A Bentley, an Aston Martin and a Harley Davidson motorcycle will be used for the photography sessions during the morning and afternoon\*. **ASA Infinity Studios** will use its purpose built 93sq m infinity cove for the practical workshop session.

### ITINERARY

- 10.00** Arrival and introduction from WDC and ASA professional photographers
- 10.30** Practical demonstration from ASA's professional photographer explaining best techniques using flash lighting for automotive photography
- 11.00** Delegates will take part in hands-on photo-shoot of a car and the professional photographers will give advice, tips and practical assistance
- 13.00** Break for lunch and discussion time
- 14.00** Afternoon session in which delegates will be photographing a car and motorcycle with the professional photographers
- 16.00** Q&A and closing discussion
- 16.30** Delegates depart  
Information packs with advice notes provided
- DATE:** Friday, 8 October 2010
- COST:** £130 per person

**THIS POPULAR EVENT IS LIMITED TO 10 PLACES AND EARLY BOOKING IS ADVISED**

**ONLY £130  
BOOK NOW!**  
TEL: 0203 1484326  
spiadmin@ipcmedia.com

**WHAT YOU NEED TO KNOW:** The workshop is for 10 people only. In the event that there are not enough bookings, the event will be cancelled until further notice, and all monies paid will be refunded. You will need to bring your own camera and equipment, but studio flash will be provided for your use. Only one person can photograph the vehicle at any time. \* Vehicles may be subject to change. Price includes demonstrations, facilities, sandwich lunch and refreshments. For more information on the venue visit [www.asainfinity.com](http://www.asainfinity.com)



A workshop  
for the experienced  
photographer who would  
like to explore the  
exciting field of studio  
portraiture

# STUDIO PORTRAITS WORKSHOP



The best way to explore studio lighting for portraiture is to see it in action up close and then try out the ideas for yourself with an experienced photographer on hand. With a small group (maximum of eight students), this is the workshop where you can see what's going on, try your hand at the techniques and where there's plenty of opportunity to ask questions of the tutor.

## AREAS COVERED INCLUDE:

Approaches to portraiture; Understanding light quality; Modifying light; Using a flash meter; Correct colour rendition; Editing specifics for portraits

## COURSE ITINERARY

The morning session will be an interactive demonstration of typical lighting scenarios. In the afternoon you'll get to try the ideas explored in the morning session for yourself. Plus, plenty of time has been set aside at the end of the day for questions and further demonstrations.

**AFTER CARE** After the course you will be sent a set of notes based on the actual content of the course on the day, so there's no need to worry about making your own notes!

**SKILL LEVEL** You'll need to be comfortable using your camera in manual mode and have a good grasp of basic photographic technique.

**EQUIPMENT** Any camera that allows you to set exposure and focus manually and is fitted with either a standard hotshoe (for Sony/Minolta models you will require an adapter) or a PC flash sync socket will be suitable for the workshop. A short telephoto or zoom lens that covers the medium telephoto range is desirable. All studio equipment will be provided for your use.

## WHEN AND WHERE

**DATE:** 5 November 2010

**TIME:** 9.30am-5pm

**LOCATION:** Blue Fin Building,  
110 Southwark Street, London SE1 0SU

**ONLY £125  
BOOK NOW**

Call 0203 148 4326 or email  
spiadmin@ipcmedia.com



Note: Due to popular demand, this course is in addition to the workshop on 29 October, which has sold out.

The workshop is for 6-8 people only, so early booking is advised. In the event that there are not enough bookings, the event will be cancelled until further notice and all monies paid will be refunded. Only one person can photograph the model in the studio at any time. Price includes demonstrations, facilities, lunch and light refreshments.

For further details visit [www.amateurphotographer.co.uk/studioworkshop](http://www.amateurphotographer.co.uk/studioworkshop)

Due to release: storemags & fantamag